THE BOSTON
Medical and Surgical
JOURNAL

VOLUME 194 JANUARY 7, 1926 NUMBER 1

ORIGINAL ARTICLES

ROPE GRAFTS

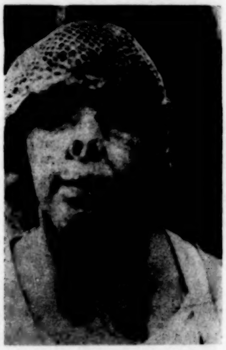
BY FRANK H. LAHEY, M.D., F.A.C.S.

THE development of the use of rope grafts by Major H. D. Gillies and his associates at Sidcup, England, during the war, provided a method of grafting skin which is of inestimable value in plastic surgery.

Although the principles of the method are generally well known, it may be of use to explain them in a few words, and to state one or two of the difficulties which we have encountered in an experience with the methods.

CASE I, ILLUSTRATION 1. This case presents complete loss of both alae as a result of burns. Side view.

CASE I, ILLUSTRATION 2. Front view. Note that septum is all that remains of nose.

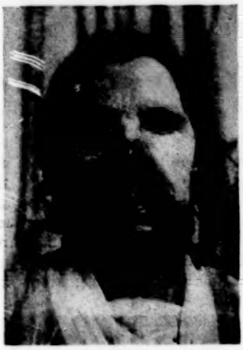


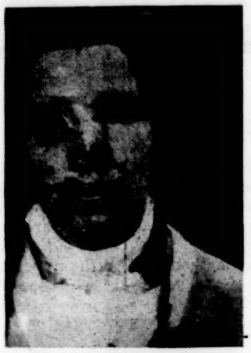
CASE I, ILLUSTRATION 3. Rope grafts constructed on neck.

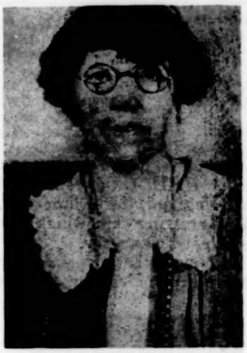
A rope or tube graft is fashioned by making parallel incisions on the neck, chest or wherever it is desired to construct the tube. The strip of skin so marked out is elevated from its bed until it represents a flat strip or ribbon of skin attached only at its upper and lower end. The two cut edges of this ribbon of skin are then brought together and sutured so that the raw side of the ribbon is inward and so that when stitches have been inserted from the lowest part of the ribbon to the top, the ribbon has been converted into a complete tube, except for a short distance at the botom and top, tubing of which would result in constriction and interference with the blood supply of the graft.

This having been completed, the two cut edges beneath the tube and representing the edges of the bed from which the graft was removed are approximated beneath the wound until closure is complete except for a small area at the upper and lower end of the ribbon closure of which as in the case of the tube graft would result in interference with the blood supply of the graft. Sterile boric ointment strips are now placed over this wound beneath the tube to prevent the formation of crusts of dried blood and serum between the two suture lines and the wound allowed to heal. Healing is usually complete in from nine to twelve days, the wound is dry, the tube well nourished and either end of the graft with an attached small segment of skin cut to the pattern required may be transferred to the lip, cheek, nose, eye, or wherever needed, a good blood supply coming through the long tubed pedicle. When the transferred end of the tube has united well with the area into which it has been grafted, usually in about ten to fourteen days, the tube may be cut away at the point where a sufficient amount of skin has been transferred, the remaining tubed pedicle split and sutured back into its bed which has been re-opened or it may be cut off at its base and sacrificed rather than re-open up its bed and sut[illegible]e it into place again.

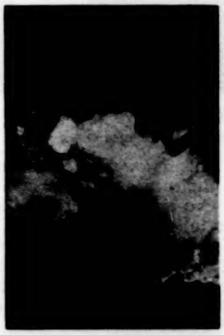
If i[illegible] not possible to obtain the skin desired by tra[illegible]erring one end of the tube to the point into which the graft is to be inserted, one end may be transferred and inserted half the distance to the point desired and at the end of two weeks, the base of the pedicle may be severed and transferred into the desired part, the orignal point of transfer now serving as a pedicle.


CASE I. ILLUSTRATION 4. Rope grafts transplanted into nose.


CASE I. ILLUSTRATION 5. Tubes cut away, a sufficient amount being left on the nose from which to model new alae; plastic on scar beneath right eye.


CASE I. ILLUSTRATION 6. End result. Front view. Note new alae; also note good nostrils.

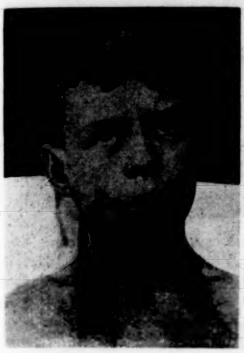
CASE I. ILLUSTRATION 7. Lateral view showing new ala.


CASE I. ILLUSTRATION 8. Another lateral view showing new ala.

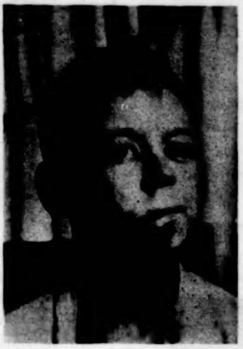
The advantages of tubing a graft are the prevention of infection on the raw area, since when tubing is done the graft pedicle is entirely surrounded by skin; the superior blood supply which comes from uniting both cut edges of the tube, thus permitting the employment of pedicles of considerable length and insuring almost certainly adequate nourishment of the transferred flap.

There are a few factors which we have learned from our experience with this method which go to bring about success or failure. It is necessary to make the two parallel incisions, which mark out the flap, sufficiently far apart so that the strip will be wide enough to permit of connecting it into a tube and yet not so constrict it that there will be a definite blanching of the segment when the approximating stitches are tied. There is a distinct tendency we have found to make the flap too narrow, due to a fear of not being able to get together the skin edges of the bed from which the flap has been elevated.

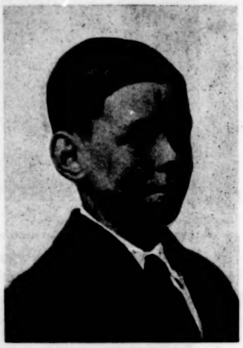
Care must be taken also to see that too much subcutaneous fat is not removed with the flap which is to be tubed as this adipose tissue, if too



CASE II, ILLUSTRATION 1. A disfiguring, contracted scar on the right side of the lower lip, the result of a burn, together with the tube graft already constructed.

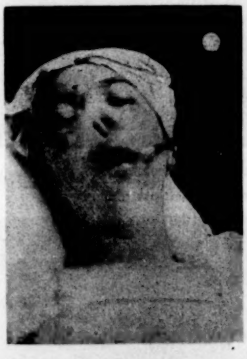


CASE II, ILLUSTRATION 2. Scar excised from the lower lip and a patterned flap sutured into defect, by tube pedicle method.



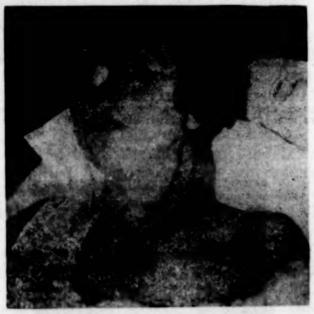
CASE II, ILLUSTRATION 3. End result.

great in amount, will prevent tubing of the graft by filling its center so that the edges cannot be approximated or can be approximated only with difficulty and the production of blanching of the tube. Should difficulty in tubing occur it may usually be overcome, provided the flap itself has not been made too narrow for tubing, by cutting away a greater amount of subcutaneous fat from the ribbon of skin to be tubed. It is, however, a distinct advantage it seems to us to have a moderate amount of subcutaneous fat, a sufficient amount, for example, that when the tube is constructed its center is completely filled with adipose tissue and contains no dead space or canal, insuring thus no pocket for the accumulation of serum and also walls of sufficient thickness to provide an adequate blood supply.



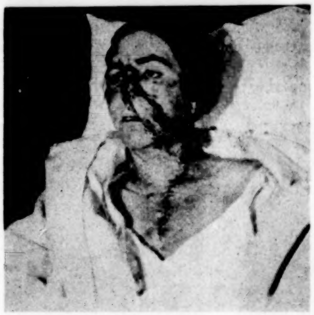
CASE III, ILLUSTRATION 1. Complete loss of nose, together with all bony nasal structures, including entire loss of nasal bones.

Careful measurements should be made as to the distance between the point into which the graft is to be inserted and the point which is to serve as the base of the pedicle. This is essential, as to be successful, the end of the tube must reach its objective easily and the pedicle tube hang loosely by its base and transplant. Tension upon the tube in an effort to stretch it to a point tightly enough to shut off the circulation, the portion above this is then stripped bloodless with the fingers toward the base. When the tube more distant from the pedicle than permits easy approximation will result in necrosis and loss of many of the transplants.

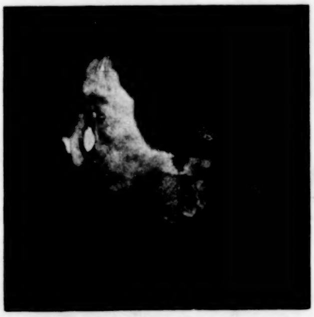


CASE III, ILLUSTRATION 2. Rope graft constructed.

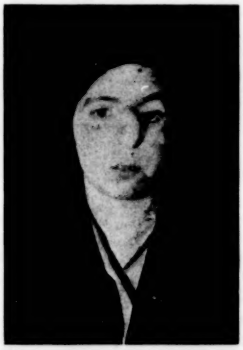
To test the vascularity of the graft when it is ready for transfer, a string is tied around its



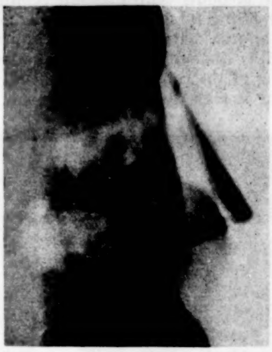
CASE III, ILLUSTRATION 3. Rope graft with patterned flap transplanted into nose.



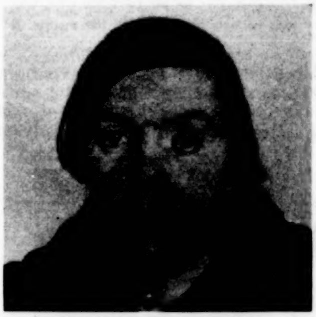
CASE III, ILLUSTRATION 4. Pedicle flap cut away and lower end of flap sutured into nose with an excess of skin from which to model new nose.



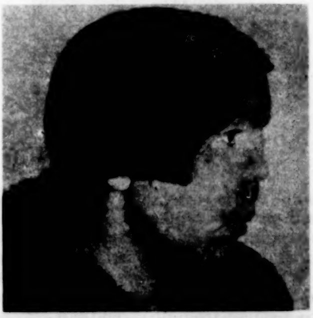
CASE III, ILLUSTRATION 5. New nose modeled but with no bony support.



CASE III, ILLUSTRATION 6. A framework of bone grafted beneath transplanted nose. This framework consisted of segments of the crest of the tibia; the long segment serving as the ridge pole and inserted into a bony socket in the frontal bone; the short segment fitted by notching into the lower end of the long segment and resting against the superior maxilla. This bony framework, now several months after transplantation, may be felt as a firm, rigid support.



CASE III, ILLUSTRATION 7. End result. Front view. A further modeling must be done to improve the flare of the left nostril.



CASE III, ILLUSTRATION 8. Side view showing new nose.

lower end, that is the end to be transferred, is stripped pale another ligature is tied around the base at the point which is to be the pedicle. At the end of a minute or two the ligature at the pedicle or base is removed and the degree of flushing and the rapidity with which it descends the graft is noted. If a good red color appears and rapidly runs down the tube, it may be transplanted without fear of any lack of blood supply.

In a reverse manner one may make sure of the vascularity of the transplanted end if there is any hesitancy as to the time when the transplantation portion may be cut away from its pedicle.

If the tube is resutured back into its bed after being cut away from the transplanted flap, it must be split along its line of suture, its edges undercut sharply and its central cord of subcutaneous fat trimmed out with scissors so that the tube is again converted into a ribbon. In a like manner the edges of the wound into which the flap is to be returned must also be sharply undercut, to permit of good approximation of edges.

The illustrations of the three cases presented here and illustrating this method together with their legends are sufficiently explanatory so that they require no further remarks.

THE KAHN AND WASSERMANN REACTIONS. A COMPARATIVE STUDY*

BY WILLIAM A. HINTON, M.D.

THREE years ago we began comparing the results obtained by precipitation methods and our own Wassermann technique[1]. Our attention was soon concentrated on the Kahn test because of its simplicity and the encouraging results which our preliminary experiments gave.

We made our first Kahn tests according to Kahn's original description[2] and with an antigen which he sent us. The Kahn tests agreed with our Wassermann reactions in 47% of 387 cases. Next, we varied his technique by allowing the tests to stand over night and then incubating them for two to three hours in a water bath of 37°C. By this simple change of the incubation period we obtained agreement in 82% of 322 cases tested. Finally, by incubating for only three hours immediately after making the tests we obtained agreement in 93% of the next 403 cases. We have given the above results because Kahn later modified his method[3] in such a way as to make it really worthy of a critical, comparative investigation. This we have attempted in the following study, based on his latest modification except where we have changed it to make the readings easier.

Our technique is the one which Kahn demonstrated to us up to the point where the readings are made. From there on the following procedure is used: Each tube containing the antigen and the patient's serum is centrifuged at a high rate of speed, then the supernatant fluid is carefully and completely poured off and the precipitate, if there be one, is finally suspended in 0.5 cc. of 0.85% salt solution. The suspended particles may be discerned easily in the salt solution. The reliability of this modification was tested in a large number of specimens which gave clear-cut positive or negative Kahn reactions, the resuspension in salt solution resulting only in clearer reactions. This is especially advantageous in dealing with hemolyzed blood.

We tested a large number of specimens before any hemolysis had occurred and again after varying degrees had ensued as a combined result of standing at room temperature and agitation by hand. The results obtained on the same specimens before and after hemolysis were always the same unless there was almost complete solution of the clot with a resulting tarry mass. Since many specimens of blood reach us in a hemolyzed condition, particularly during the summer months, this characteristic of the Kahn reaction was especially desirable.

Our present report is based on a total of 1325 cases, which we have divided for convenience into three series. The first are those upon which a Kahn and a Wassermann test were done in each instance. The material consisted of specimens of blood from patients in insane hospitals, general hospitals, dispensaries, and the Boston Lying-In Hospital. The second series were specimens obtained at the Peter Bent Brigham Hospital, the Boston Dispensary and from Dr. C. Morton Smith, of the Harvard Medical School, and included only those cases where our Wassermann technique gave a negative reaction. The third series comprises serums upon which a quantitative Wassermann, a Kahn and a Sigma test were done.

Table I shows the comparative results obtained in the first two series.

Series I, consisting of 509 cases shows an agreement in 433 cases, (85.06%). Column III, which shows the largest and at the same time the most significant disagreement, contains 64 cases which gave a positive Kahn and a negative Wassermann. Twenty-seven of these were cases of cerebro-spinal syphilis which had received varying amounts of anti-syphilitic treatment. There were eleven cases of treated syphilis without definite neurological symptoms, some of which were latent. Two of the patients presented a psychosis but no history or clinical evidence of syphilis and two were for "diagnosis" without clinical history or evidence of the disease. The nature of the last four cases, therefore, was undetermined clinically.

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*From the Wassermann Laboratory, Massachusetts Department of Public Health.

This column also includes twelve cases of pregnancy. The comparatively large number of positive Kahns and negative Wassermanns in the 196 cases of pregnancy included in Series I suggested a more critical analysis of the pregnancy cases, because according to these figures the incidence of probable syphilis among women in the Boston Lying-In Hospital would have to be 11.3% instead of 5.2% which we had found in a large group previously reported[4]. In order, therefore, to throw additional light on this group, 158 serums from pregnant women, not included in this series, were subject both to a Kahn and a Wassermann reaction. Twelve cases or 7½% gave a positive Kahn and a negative Wassermann and fourteen cases or 8.8% gave a doubtful Kahn and a negative Wassermann. Thus it will be noted that the incidence of positivity in pregnancy as obtained by the Kahn test is practically three times as great as that secured by the Wassermann, in spite of the fact that we have used a sensitive system with cholesterinized antigens[1]. These figures are far in excess of the clinical expectation of syphilis, provided no racial elements enter into the figures to swell the percentage. As a matter of fact all the racial groups which we have studied have shown an incidence of 6% or less of positive Wassermann reactions except the Negro, and there were only three women of this race out of the 344 tested. In spite of the unfavorable showing which the Kahn reaction has made in the cases of pregnancy the analysis of the other cases in Column III shows it to be more sensitive in the detection of residual syphilis after vigorous treatment.

TABLE I

	I Kahn — Wr. —	II Kahn + Wr. +	III Kahn + Wr. —	IV Kahn — Wr. +	V Kahn — Wr. ±	VI Kahn + Wr. ±	VII Kahn ± Wr. —	Total	% of Agreement
Series I	407	26	64	2	8	2	0	509	85.06%
Series II	557	0	12	0	0	0	12	581	95.8%

NOTE: + indicates positive; ± doubtful; and — negative.

There were no cases where the Wassermann was ± and the Kahn ± or the Wassermann + and the Kahn ±.

Series II, consisting of 581 cases, shows 557 cases which in Column I were negative in both instances. Column III shows twelve cases where the Kahn reaction was positive and the Wassermann negative. This included four cases of treated syphilis and eight cases on which no history or clinical evidence of the disease could be obtained. This group although small was well studied and suggests that occasionally a false positive reaction may occur by the Kahn method.

Column VII shows twelve cases in which the Wassermann was negative and the Kahn doubtful. One had a definite history of syphilis twenty years ago and had received treatment, the others had no clinical or other evidence of the disease.

Series III, which is contained in Tables II and III, consists of 97 individuals upon whom 275 Wassermann, 272 Kahn and 258 Sigma tests were done. These cases had been diagnosed as syphilis on both clinical and serologic grounds and were under intensive treatment with both salvarsan and bismuth.

TABLE II

	I	II	III	IV	V	VI	VII	VIII	
Wr.	—	+	±	—	+	—	+	±	Total
Kahn	—	+	±	+	—	±	±	+	
No. of cases	17	44	5	4	3	2	1	2	78
No. of tests	54	124	6	7	9	2	1	3	206

Table II shows that there was an agreement in 66 out of 78 cases. This table further indicates that there was an average of three Kahn and three Wassermann tests done on each negative case and between two and three Kahns and two and three Wassermanns on each positive case.

Columns IV, V, VI, VII, VIII again show the difference in the results obtained with the Kahn and the Wassermann tests, there being almost an equal number, four and three respectively, which gave positive reactions by one method when negative results were obtained by the other. The following nineteen cases are illustrated separately under Table III because they show in detail the results obtained by the Wassermann and Kahn Test.

TABLE III

Case number	Wr.	Kahn	Interval between tests
1—C	—	+	
	—	—	19 days
	—	—	15 "
2—B	—	+	
	—	—	33 days
	—	—	4 "
3—Z	—	+	
	—	—	36 days
„ 17	—	—	

4—J	—	+	
	—	±	7 days
	—	—	7 "
	—	+	7 "
5—W	—	+	
	—	—	7 days
	—	—	14 "
	—	+	8 "
	—	—	7 "
	—	±	6 "
6—F	—	—	
	—	+	8 days
	—	—	7 "
	—	—	6 "
	—	—	14 "
	—	—	9 "
7—P	—	+	
	—	+	13 days
	±	+	7 "
	—	—	2 "
	—	±	9 "
8—T	—	+	
	—	—	32 days
	—	±	15 "
9—McC	—	—	
	—	+	6 days
10—D	—	—	
	+	±	29 days
11—Br	—	+	
	±	—	15 days
12—Blac	±	—	
	±	+	10 days
	—	—	5 "
13—Bo	—	+	
	+	+	15 days
	+	±	21 "
	+	—	13 "
14—Bl	—	—	
	±	±	13 days
15—R	+	+	
	—	—	7 days
	—	+	6 "
	+	+	14 "
	±	+	1 "
16—T	+	+	
	+	—	21 days
	+	+	6 "
17—W	—	+	
	+	+	31 days
	±	+	12 "
18—McC	+	+	
	±	+	7 days
	—	+	7 "
19—J	+	+	
	+	+	8 days
	+	+	6 "
	+	+	7 "
	+	+	8 "
	+	+	6 "

An inspection of the data on the first nine cases in Table III, which had a total of 35 Wassermann and 35 Kahn tests indicates that the Wassermann gives a more consistent reaction, for there was only one doubtful reaction in the 35 Wassermann tests, while the Kahns showed considerable variation. For instance, in the first three cases the Kahn was definitely positive on first examination but became negative in a relatively short time. It is hardly to be expected that this change was the result of treatment because the cases were of several years duration and treatment is never so effective serologically as the tests would indicate in this class of patient. This is further supported by the variation noted in the five succeeding cases. Cases 10-D to 18-McC, inclusive, show variations which would appear to be dependent upon the test rather than on the treatment administered. Although these cases present certain discrepancies in the Wassermann reaction, on the whole the Wassermann is as consistent as the Kahn. This table should support the assumption that the Kahn occasionally gives a false positive reaction: cases 6-F and 12-B are illustrative because the positive reaction in each was preceded and followed by negative tests. Case 19-J was included in this list because of the remarkably consistent results obtained.

Conclusions: I. The Kahn reaction constitutes an easy and sensitive test for the detection of syphilis. Its error probably is on the side of false positives, particularly in pregnancy.

II. As modified by us, we think that the Kahn reaction is serviceable especially in testing hemolyzed specimens with the reservations noted in I.

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TREATMENT OF ECLAMPSIA*

BY SAUL BERMAN, M.D.

THE conservative treatment of eclampsia is slowly becoming universally accepted. The poor results obtained by active measures are forcing their abandonment. Although instrumental and manual dilatation of the cervix, difficult forceps, and versions through the partially dilated cervix, and vaginal hysterotomy are being put aside, there is still too much hesitation and lack of faith in the conservative policy. Nearly all the obstetricians of today have been trained in the period when the active treatment was at its height and therefore find it difficult to refrain from some interference. The desire to do something is overwhelming. Tweedy[1] in 1896 summed up the situation admirably. "It is an unfortunate fact that the surgical treatment is growing in favor day by day, and this is not surprising, for not only has it the sanction of great names, but it also affords the medical attendant much satisfaction, substituting as it does an active mode of treatment for inactivity with apparent impotence. I cannot but think, however, that it is unsound in theory and disastrous in practice." Many who have been won over to the conservative principles are lacking in a definite plan of procedure. It is our purpose to offer a method which can be employed as a routine. Without a standardized program the results of any form of treatment cannot be studied critically.

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*From the Clinic of the Boston Lying-in Hospital.

Stroganoff in 1897 saw the futility of prompt delivery. He was among the first to establish the conservative or prophylactic method as he terms it. He contends that convulsions play the most important part in the high death rate and that everything must be done to prevent their recurrence. This fact is admitted by all. Statistics from all parts of the world show a mortality of 25% in cases of toxemia with convulsions and 2.5% in those without convulsions. He[2] regards eclampsia as chiefly the result of two factors, (1) toxins in the maternal blood and (2) increased irritability of the nervous system. Convulsions lead to a great increase in the toxins, consequently the crux of the treatment is to lessen them. This he does by the combined administration of morphia, chloral hydrate, and chloroform. These drugs calm the patient, produce sleep, and lessen the spasm of the blood vessels. To diminish the concentration of the toxins fluids are forced. In addition to sedative drugs he advocates absolute quiet with the minimal handling of the patient, thereby tending to eliminate as much as possible all outside stimuli. Whenever it is necessary to examine or disturb the patient he gives her several drams of chloroform. He resorts to venesection of not over 400 c.c. if patient has had three or more convulsions in rapid succession, or if patient has had at least seven convulsions before entrance to hospital. In no case does he attempt delivery until the head is low in the pelvis and the cervix fully effaced, nor does he induce labor while patient is in the acute stage of her illness. In most cases labor will start up spontaneously. His gross figures up to 1924 are 7.7%[3], while if an allowance is made for the work of the first five years which he claims were chiefly experimental, the mortality is reduced to 3.3%. In his latest paper[4] he claims that if he is given a case at an early stage and not obviously moribund, there should be no mortality.

From the Rotunda clinic at Dublin low mortality reports have also appeared. Here again delivery is secondary. The treatment is aimed at the elimination of a toxin. The first care is to prevent injury to the tongue during the actual convulsion, and a gag is placed between the teeth if premonitory signs are noted; otherwise no attempt is made to separate the teeth until the jaws relax. The patient is put in the Sims position with a single pillow under the head. The stomach is then lavaged with bicarbonate solution, one dram to the pint, until the return is free from gastric contents; and then Mistura Senna Comp. with an extra dram of $MgSO_4$ to the ounce is run in with a pint of bicarbonate solution, or three ounces of castor oil are given. This gastric lavage is not repeated. The rectum is then cleared of all solid feces and a number 24 stomach tube is passed up 14 to 18 inches. The bowel is then irrigated first with water until the returns are clear and then with bicarbonate solution, two pints of which are left in with four ounces of purgative. In a few cases colon lavage may be required only once, but it is better to repeat it in 6 or 8 hours. When the patient can drink, a purgative is given every 6 or 8 hours. Water is given freely. In cases with little or no edema, bloody urine, vomiting, or profound coma without many convulsions, a 40 ounce submammary infusion of bicarbonate solution is given. For the past four years morphia has not been administered, because in their opinion it does not lessen the convulsions. If the head is felt in the vagina and delivery is slow, forceps are used. During the last three years Fitzgibbon[5] treated 40 cases with 4 deaths, two of which he feels were avoidable, and two due to cardiac failure.

The Stroganoff and the Rotunda methods are conservative, yet they differ greatly. Both abstain from inducing labor and forcing delivery; both treat the toxin rather than the pregnancy, yet one employs large amounts of sedatives, while the other uses none. It therefore seems that the important element in the conservative policy is not found in any particular drug, but in refraining from operative interference. It is only too well known that these patients very readily go into shock unless handled very gently, and even then many require heroic measures to carry them by that critical stage.

Lazard in *The American Journal of Obstetrics and Gynecology*, February, 1925, reports a mortality of 5.8% by the use of a 10% solution of $MgSO_4$ intravenously. He employs 15 to 20 c.c. following each convulsion and whenever the patient becomes restless. She immediately quiets down, the convulsions either cease or come at much less frequent intervals, and large amounts of urine are secreted. The anti-convulsive and sedative action of $MgSO_4$ has been thoroughly established by Meltzer and Auer[6] and a host of others. Lazard also thinks that the $MgSO_4$ aids in the elimination of the toxins. "I also believe that we get a depletant effect by withdrawing of fluids from the tissues into the blood stream, thus reducing the edema. In reducing the edema of the brain the coma clears up more rapidly and the increase of the watery elements of the blood increases the urinary output and relieves the patient of her toxins." We have used the $MgSO_4$ solution in several cases and thus far the results have been very encouraging. The patients become restful and the urinary output increases. The convulsions do not cease entirely, but come much less often. We believe it a worthy adjunct to our present methods of treatment and deserving of a fair trial. We noticed no respiratory embarrassment, but would advise having on hand a 25% solution of calcium chloride, 10 c.c. of which given intravenously will balance the action of the magnesium.

Two important therapeutic measures are the cause of a great deal of dispute, venesection and morphia. Stroganoff believes that 400 c.c. are sufficient, while Williams[7] on the other hand, following the teaching of Lichtenstein[8], advocates the removal of at least 1000 c.c. He thinks that no real benefit can be derived from a small amount. Beck[9] has had excellent results with large amounts of ante-partum venesection. It seems to us that the withdrawal of 1000 c.c. before delivery with the amount that is lost at the delivery is too much for most patients to endure. With the known tendency for these people to fall into shock after delivery the removal of too large an amount may be just sufficient to prevent a rally. Again it is a common observation that the blood pressure returns to its high point soon after venesection. Why is it not more logical to keep the patient quiet, encourage elimination, and force fluids rather than attempt to lower the blood pressure by bleeding. Perhaps the elevation of the blood pressure is a protective mechanism? Have we not all seen fatal cases with low blood pressures? Besides, many of these patients have a rather severe anemia. Venesection in these cases surely appears illogical. The success of the Stroganoff and Rotunda methods may be partly due to the lack of significance attached to the elevated blood pressure, and rather to the attention focused on the treatment of the toxin. We, therefore, prefer not to bleed our cases ante-partum. If, however, two hours after delivery the systolic pressure remains at 150 or over, or if convulsions continue, a pint of blood is withdrawn at once, and this is repeated a few hours later if the desired result is not obtained.

As for morphia, some give huge doses, while others give none, especially the Rotunda group. Even though morphia may not prevent or lessen the convulsions, as some believe, we feel that moderate doses calm the patient considerably and make her less susceptible to external stimuli. Again subcutaneous injections in those with edema are probably not absorbed. We advise the intramuscular route as advocated by Dr. Newell. The opponents of morphia also believe that it hinders alimentary elimination and causes pulmonary edema. We have all seen patients come into the hospital with pulmonary edema who received no morphia, and feel that the repose given by morphia more than counterbalances any diminution in alimentary elimination.

The importance of keeping the patient in quiet surroundings cannot be overemphasized. The least noise or jarring often starts a convulsion. A rectal examination in a conscious patient who had been free from convulsions for ten hours was immediately followed by several. The administration of a few drops of croton oil has acted similarly or an attempt to give an enema. The use of chloroform is detrimental because of its toxic action on the liver, but the employment of some other anesthetic seems necesary. Nitrous oxide is our choice. Ethylene may be substituted, although we have had no experience with it.

For the past 10 months all toxemic patients in whom labor was induced have been handled in about the same manner as the eclamptics. If a patient is sick enough to warrant induction of labor, she should be treated with all the care at our disposal, and means should be taken to prevent, if possible, the onset of convulsions. The results have been excellent. Instead of a frightened and apprehensive patient, we substitute one who is calm in her repose. Under gas and oxygen anesthesia a bag or bougie is inserted or the membranes are ruptured, and after that the patient is left in a quiet room. Fluids and semisolid food are given and she is examined at infrequent intervals, always under an anesthetic. When advanced in labor and if the pains become annoying, gas is given with them. We find under the above regime that labor is not prolonged, and much less shock occurs. A few patients remember nothing about the entire procedure. We have had no experience with the Rotunda method. After considerable experimenting we have arrived at a routine which we trust will reduce our mortality and give us a definite basis for careful study. We advocate absolute quiet with the minimum of handling and then only under gas and oxygen anesthesia, morphia and chloral according to Stroganoff, intravenous $MgSO_4$, plenty of fluids, and the early establishment of elimination. No attempt should be made to hasten delivery or induce labor until this method has been given an adequate trial. Surely anything which promises to reduce our huge mortality is worth attempting.

ECLAMPSIA ROUTINE

1. Place patient in quiet darkened room with special nurse.
2. Plug ears with oiled cotton and cover eyes.

3. On admission, morphia gr. ¼ s. c. and then follow Stroganoff routine.
   - 1 hr. after admission 30 grains chloral hydrate by rectum with 100 c.c. milk and saline.
   - 3 hrs. after admission morphia gr. ¼ s. c.
   - 7 hrs. after admission 30 grains chloral hydrate by rectum with 100 c.c. milk and saline.
   - 13 hrs. after admission 20 grains chloral hydrate by rectum with 100 c.c. milk and saline.
   - 21 hrs. after admission 20 grains chloral hydrate by rectum with 100 c.c. milk and saline.
4. Under gas and oxygen anesthesia make routine physical examination, obtain catheter urine specimen; also perform any special tests—Hemoglobin and red count.
5. If in coma, turn patient on left side, elevate foot of bed, and swab mucus from pharynx as it collects.
6. Water ad lib., if conscious, also any cathartic if desired.
7. *Never examine or disturb patient unless she is given gas and oxygen anesthesia. It is best to disturb as little as possible.*
8. Intravenous $MgSO_4$ (20 c.c. 10% solution) following each convulsion. During the convulsion it is desirable to administer oxygen.
9. If several hours after a convulsion patient becomes restless, administer 10-20 c.c. of the $MgSO_4$ solution.
10. If comatose and not taking fluids by mouth, give one liter of 5% glucose intravenously every 6 hours.
11. Watch bladder carefully—do not let it become distended.
12. Deliver patient only when os is fully dilated.
13. No venesection unless ordered by visiting obstetrician.
14. Keep careful bedside notes, watching especially the effect of $MgSO_4$.
15. It is preferable to wait until the convulsions have ceased before induction of labor is undertaken—*unless there is no response to treatment.*
16. After delivery watch patient carefully for shock, and be prepared to transfuse if necessary.

NOTE—It is advisable to follow the above routine when inducing pre-eclamptics.

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BOSTON MEDICAL HISTORY CLUB. CHARCOT CENTENARY MEETING*

Dr. M. Allen Starr of New York was introduced by Dr. Harvey Cushing.

Dr. Starr (Memorial of Professor Jean-Marie Charcot):

This is a unique occasion. That medical men in France and England and in the United States, independently of one another, should assemble for the purpose of celebrating the Centenary of the birth of a medical man is an event without precedent in medical history. It could have taken place only had the object of this regard been a man of outstanding prominence, a scientist of high eminence, a teacher of great power, a leader in investigation and research, and one whose inspiration stimulated effort in his entire profession. And these were the characteristics of Charcot.

Charcot was born in Paris on the 29th of November, 1825. He was the son of a wagonmaker, a man of such limited means that he was not able to give all his children an education. Jean-Marie, however, showed so much ability in school that he was selected from among his brothers as the most promising member of the family, and, while one brother was enlisted as a soldier and another put to work in the father's shop, he was allowed to enter the Lycée St. Louis, at that time the best academy in Paris. After his preliminary education was completed there, the choice of the medical profession was made with some hesitation, for the inclination of the young man was for the life of an artist, and his ambition in this direction had been increased by a journey to Italy and a residence there of several months. This love of art persisted in after-life, as was well known to those who visited his home of late years, where he had gathered many treasures of art. It was probably the lack of means that finally determined him to take up medicine. After passing through the medical school and serving as an interne in La Salpêtrière,—an almshouse for old women, then almost unknown, but later to become famous as the theatre of his wonderful activity,—he took his doctorate degree in 1853.

For the next three years he served as chief of the medical clinic in the medical school, supporting himself meantime by giving private tuition. He was then appointed physician to the Central Bureau of Paris, with a moderate salary, his duties being to examine applicants for the hospitals and to assign them to the proper services. While filling this position and slowly making his way, he was not idle, but was preparing for that competitive examination to which ambition for success leads every young physician in Paris.

It is to be remembered that hospital appointments in France are under governmental control, and that as fast as vacancies upon the attending staff of hospitals occur, they are filled by the appointment of men who have qualified themselves for these positions by passing a very rigid examination, by presenting theses, and on occasion defending in public debate the positions taken in the theses. Charcot succeeded in passing this examination in 1860, at his second trial, and it is said that he always supposed that he owed his success to his ability in defending the points made in his thesis upon chronic ulcerative pneumonia, which were ruthlessly questioned and criticised by his examiners. One of his biographers states that it was the wonderful familiarity with the literature of his subject which really impressed the examiners, who were amazed at the long bibliography attached to his thesis. In this respect it may be noticed that his articles always excelled those of other French writers, Charcot never ignoring, as they often do, the work done by other men in other lands.

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*A joint meeting with the Harvard Medical Society, held at the Boston Medical Library, November 23, 1925; Dr. Harvey Cushing, President of the Harvard Medical Society, presiding.

Having qualified for a position as attending physician to a hospital, Charcot was able to select in 1862 the service at his old hospital, La Salpêtrière. He found a large number of old people collected together in this poorhouse, and among them many with chronic incurable diseases. He had opportunities to watch the progress of disease, both acute and chronic, in old age, and, most important of all, he had unlimited pathological material to supplement his clinical observations. It is to this latter fact that he owed the beginning of his reputation.

In order to appreciate the originality and merit of Charcot's work, it is necessary to recall the state of medical knowledge in 1872, when he succeeded Vulpian in the Chair of Pathology at the Sorbonne.

Microscopical investigation had just begun, with instruments which to our modern views were crude and inadequate. The researches of Charcot, which followed one another in quick succession, on the pathology of the lungs, liver, kidneys and nervous system, were novel and most important. They established his position as the leading pathologist of France, and while it is true that in the light of modern pathology they seem imperfect, yet it must be remembered that all scientific advance proceeds step by step and that the early work is essential to the later progress.

Charcot's pathological investigations of the nervous system were also new and most important, and are of value even today. It must be recalled that in 1872 very little was known about the brain and spinal cord and that nervous diseases were not understood. Myelitis, anterior poliomyelitis and locomotor ataxia are the only cord diseases named in textbooks of 1875. In fact it was not until 1882 that a professorship of Neurology was established in the French School of Medicine, when Charcot's investigations so directed attention to this department of medicine that it became imperative to found a Chair in the Faculty. This was done by Gambetta, then President of France, a personal friend of Charcot. It was natural that he should be appointed the first professor in that Chair. And from that date his energies were directed exclusively to the investigation of nervous diseases.

For the next ten years the attention of the entire medical world was focussed upon neurology. The discoveries of the localization of brain functions, founded on the work of Fritsch and Hitzig, Ferrier, Nothnagel and Charcot, proceeded in every country, each adding its quota to the sum of knowledge, and its practical result in opening the brain to the field of surgery, a hazardous venture before the days of asepsis, soon established its great value. Such results as Harvey Cushing reports in 1925 on a thousand such operations by himself alone, to say nothing of other thousands done by other surgeons the world over, could never have been attained without the preliminary investigations in which the work of Charcot and his school were fundamental.

From the day of his appointment as Professor of Nervous Diseases until his death his annual course of lectures and clinics at the Salpêtrière were attended by students of medicine from every land; and it may be said that there are few teachers of eminence at present living who have not drawn inspiration from his model clinics.

It was in the spring of 1883 that I had the good fortune to be numbered among his students, and it may be of interest if I relate some details of his work. On three mornings of the week, at half-past nine o'clock promptly, he would come to the dispensary of the hospital and seat himself behind a little railing, which separated him on one side from the patients, and on the other from the crowd of students, many of them foreigners, and all graduates in medicine. His assistants would then bring the patients, one by one, from the adjoining waiting-room. A concise history would be given of the case. Then Charcot would ask some searching questions, would elicit some unexpected symptom, would discover some physical appearance that others had not noticed, would examine the patient himself if there was any special point of interest, and then would quickly state his diagnosis, supporting the position taken, or discuss the probabilities or difficulties of diagnosis, often with interesting comments or some reference to the literature, and finishing occasionally with some therapeutic suggestion.

On Tuesdays the public clinic of the week was held in a large building within the hospital yard. The room was arranged with a stage and footlights, and tiers of seats arose from the front level to quite a height at the rear of the room. As many as six hundred students could be seated, and the place was always full. After the audience had gathered, dark shutters were closed at the windows, the footlights were turned up, and the clinic began. Charcot, attended by a number of his assistants, entered and seated himself on one side of the stage, at a little table, looking not at his audience, but across the stage. Then the patient or patients, for he usually showed a number at once, either to display variations of one disease or to draw contrasts with other diseases, were placed before the footlights, and sometimes, when a particular feature had to be demonstrated, a calcium light was turned on the patient, whose figure, the chief point of light in the darkness, could always be perfectly seen by all. In a distinct but not loud voice, with a slowness of speech that led to a clear understanding,—especially by the foreign element in his audience,—Charcot would describe the case, call attention to special symptoms, show the peculiarities of spasm or deformity or tremor or gait, compare them with other similar forms for the purpose of differentiation, and sum up the diagnosis. Then, dismissing the patient, he would begin to describe the lesion, and at once on the screen at the opposite side of the stage the magic lantern would flash out the picture he wished to show, either in the form of a sketch made from nature, or an actual slide of a section of the spinal cord, or a part of the brain magnified by the microscope, or a photograph of some unusual clinical type of the disease in question. Thus, symptomatology, diagnosis, and pathology were presented in orderly succession in a manner most clear and forcible, and with an effect that was most instructive and impressive. It has been said that the whole clinic was arranged for theatrical effect. I believe that it was the only manner in which it was possible to demonstrate in a clear light to the large audience all the features, clinical and pathological, of the subject. But grant that it was theatrical; it left on the mind of the student a series of mental pictures of patients and of lesions which no amount of private study could possibly produce. It taught men so that they could not fail to remember; and what higher result can a teacher wish?

And the students appreciated it. They gathered enthusiasm from Charcot's evident earnestness. No teacher has ever had such a constant company of devoted young men about him, eager to share in his studies, to be directed in their investigations, to be considered a part of his working force. He had the faculty of engaging their interest, of stimulating their investigations, of directing their work. He supplied them with material and showed them how to use it. As a result, there appeared in France from 1882 till his death in 1893 an enormous number of clinical and pathological researches in the department of neurology, all of them inspired by Charcot, though carried out by some of his pupils. He built up the school of the Salpêtrière. One can hardly name a man of eminence in medicine in France since his time who has not been glad to call himself a pupil of Charcot. And when, in addition to the long list of his own articles,—his collected works will fill fifteen large volumes,—the articles are collected on which his name appears as collaborator, there is presented a mass of medical literature far surpassing that of any other medical school in the world.

Bourneville has said that Charcot was not fond of writing or of publication, that it required two years of constant urging to induce him to publish the first two volumes of his lectures, and that he never would have given to the world many of his articles, had not some one of his assistants attended to the details of publication. Gilles de la Tourette says that in his later years all of Charcot's clinical lectures were carefully prepared in writing, so that at the close of the lecture he merely handed his notes to one of his assistants, who was then able to arrange them with the histories of the cases for publication.

It would take too much time to specify his various books, lectures, and articles published between 1875 and 1893. I cannot, however, omit to mention his "Localisations des Maladies Cérébrales" and his "Localisations des Maladies de la Moelle Epinière," which did much to establish on a firm basis the doctrine of the localisation of cerebral and spinal functions, and which appeared in the *Revue de Médicine* from 1879 to 1889, and his numerous valuable papers on the pathology of spinal lesions. To him we owe the discovery of amyotrophic lateral sclerosis, which has been called Charcot's disease, and his analysis of aphasic conditions is still of great service to clinicians. It should also be known that, with Vulpian and Brown-Séquard, he founded the *Archives de Physiologie* in 1869, the *Progrès Médical* in 1873, the *Revue mensuelle de Médicine et de Chirurgie* in 1877, now known as the *Revue de Médicine*, the *Archives de Neurologie* in 1880, and the *Nouvelle Iconographie de la Salpêtrière* in 1888. To all these he continued to contribute from time to time until his death. It is said that the sale of his three volumes of lectures published from 1872 to 1880 surpassed that of any other medical work ever published. These lectures have been translated into German, English, Spanish, Italian, Hungarian, and Russian.

Charcot's contribution to the study of functional nervous diseases was no less important than that to organic affections. He was the first to make systematic investigations of hysteria—to analyze its symptoms, to trace them to their mental basis and to ascribe them to suggestion, either hypnotic or auto-suggestive. Many of his lectures are devoted to this subject, as will be more fully shown by Dr. Morton Prince on this occasion.

Public recognition of his abilities and eminence was not wanting. At his death he had been president of all the chief medical societies in Paris, and was a corresponding member of numerous societies in every city on the continent of Europe, of the New York Neurological Society, and of the College of Physicians of Philadelphia. He was made a member of the Institute of France in 1883, and Commander of the Legion of Honor in 1892. It may be justly said that France honored herself by conferring honors upon him, for there are few Frenchmen who did as much as he to support the waning French authority in matters of science or to preserve the fading reputation of the French school of medicine. Not medicine alone, but French prestige as well, had reason to regret his untimely demise.

It remains to allude to his personal characteristics. Charcot was a man of great dignity, of calm repose, of even temper, of slow thought and utterance, but of much reserve power. In appearance like Napoleon, and in manner reserved and observant, he was not the type of man to be popular. Yet his dignity was one that was felt to be appropriate to a man o' great power, and was never assumed. With patients suffering from trifling affections he showed no sympathy, possibly little interest. With patients whose diseases were grave, or obscure, or of rare type, he was kind, attentive, interested, and was ready to spend valuable time in most careful investigation. Of this I am assured by private patients of my own who had been under his care, and who would never have come away with such kindly feeling had they not experienced thoughtful attention at his hands. His relation to his pupils was also one of mutual interest and affection. He was never familiar with them, yet he always respected and sought their opinions, was never autocratic in the direction of their work, and was always the subject of their devoted admiration and respect.

Without characteristics of many kinds of the noblest type, no man could have kept about him such a number of able medical workers, all loyal to him in the midst of their labors.

His domestic life was a delightful one. He was married early in life to a lady of considerable wealth, who was enthusiastic in his work, and by whose aid many scientific undertakings, otherwise impossible, were carried out. He had two children, one a son whom it was his fond desire to see succeeding as a physician, but who preferred the more adventuresome life of an explorer and who led an expedition to the south pole. Their homes—he had a country place at Neuilly, as well as a great apartment on the Boulevard St. Germain—were superb in every appointment, and contained many treasures of art; for the artistic sense was one which he delighted to indulge. He was a designer, a painter on porcelain and in oils. The tiles in his study mantel and the ceiling of one of his salons were painted by his own hand. Many of the drawings displayed at his lectures and published in his books were made by himself. He delighted in gathering about him curios of every kind. He cared less for music than for painting, and always preferred the classic and Italian schools to Wagner, showing himself thoroughly French in this respect. His house was open every Monday evening to his friends and pupils, and a considerable company was always glad to gather about him to enjoy his hospitality and to profit by the interesting discussions which went on.

Like every man of eminence, Charcot had his enemies, critics in science, rivals in medicine. Yet, after all their criticism is exhausted, we must admit that Charcot remains the greatest French physician since Trousseau, the greatest ornament of the medical profession of the XIX century.

It was therefore entirely fitting that this year France should honor his memory by celebrating the centenary of his birth.

This was done by the French Government, which, unlike that of many other countries, pays a just regard to scientific achievement.

The government extended invitations to other countries to partake in this celebration and eighteen other countries responded, our own among the number, by sending official delegates, of whom I was one.

The President of the French Republic was present at the great official meeting in the enormous salon of the Sorbonne. The Minister of Education presided. The Guarde Republique led by its fine band stood guard in the hall and after the formal eulogy of Charcot pronounced by his most distinguished pupil and successor in his Chair, Babinski, the foreign delegates presented their credentials and were represented in the eloquent addresses by Marinesko of Bucharest and Winkler of Amsterdam.

On the following day Pierre Marie, the successor of Babinski in the professorship, gave a most interesting account of Charcot's life and work before the Academy of Medicine.

And the formal meetings of the Society of Neurology held during two days, with two sessions each day, were devoted to the review and study of Charcot's disease, amyotrophic lateral sclerosis and to migraine, subjects on which he had made important studies.

A formal dinner, at which 700 sat down and at which many eloquent speeches were made, was ended by a most touching address of thanks made by Commander Charcot, his son, who had brought honor to his country and holds a high place in the French Navy.

On the final day the municipality of Paris gave a formal reception at the Hôtel de Ville, whose gorgeous salons were all thrown open. At this we were entertained by some of the singers of the opera and given a very elaborate feast.

Finally, Commander Charcot and his sister opened the country residence of Charcot at Neuilly, just off the Bois de Boulogne to the foreign delegates and not only showed us the salons and library of their father, which remain much as he left them, but presented us with his photograph and a copy of some of his pen and ink sketches.

Souvenirs of the celebration in the form of photographs of the Salpêtrière and of the men who have made its name famous, and a fine bronze medal of Charcot were presented by the Society of Neurology.

It was a most dignified and worthy celebration and tribute by France to one who was the leading physician in France of the nineteenth century.

Dr. Cushing: I do not see how we could have been more fortunate in having presented to us as has been presented by Dr. Starr, one-time pupil of Charcot, this picture of Charcot and his work in the Salpêtrière. I think most of us are familiar with a picture of Charcot treating a girl,—a hysterical patient, so we have all had some idea of the room in which the clinics were held. Two or three years ago I visited the Salpêtrière. I was amazed at the enormous size of the hospital, having nothing to contrast it with unless possibly the Blockley Hospital in Philadelphia. I know of no larger place. Some 3,000 or 4,000 patients were recorded by numbers only.

Dr. Morton Prince (Charcot's Work on Hysteria and Hypnotism):

It has always been one of the regrets of my life that I never studied under Charcot and that I never had the opportunity of attending his famous lectures. It so happened that I never saw him but once in my life, but the memory of that visit impressed itself indelibly upon my mind. I was then a young man, only a few years in practice. Happening to be in Paris, I wanted, of course, to see the great Charcot. So I called upon him, without an introduction, at the Salpêtrière. I was a complete stranger to him and I had no reason to suppose that he even knew my name. I shall never forget that visit. After sending in my card, I was ushered into his room. He received me with a kindness, a graciousness and a courtesy that I shall never forget, such as might have been accorded to a distinguished leader of the profession. I remember well that he was holding in his hand some medical magazines, or pamphlets, and when I told him my name, he opened one of them and said, with an engaging smile, "Is that you?" It so happened, quite accidentally, that one or two of the articles he had been reading and was holding in his hand were mine. Of course I felt immensely set up by this curious coincidence and by the fact that he had actually read and remembered my contribution. I only mention this incident now to show Charcot's graciousness and courtesy to a young man—a complete stranger.

At that time the Weir Mitchell treatment of neurasthenia was in vogue and had spread all over the world. The conversation turned on that treatment. Probably most of the younger generation present have forgotten that this treatment consisted in isolation, rest in bed, exercise by electrical stimulation of muscles and over-feeding. Charcot said to me, "I do not put my patients to bed, I do not feed them, I do not exercise them; I isolate them; that is sufficient; they get well." I replied, "Professor Charcot, there is one thing, I think you forget." "And what is that?" he said. "That is the great big dose of Professor Charcot that you give them every time you see them." I shall never forget the curious, quizzical expression that came over his face when I said that. I can see it now. He looked at me as if he did not know whether I was chaffing him, pulling his leg, or was serious. He plainly did not know what I meant and did not realize, what we now all know, the tremendous moral effect of a strong personality upon the patient. He seemed to be entirely unconscious of this.

Of course the conversation turned upon his work and I spoke in complimentary terms of his great contributions to neurology and the stimulating influence of his work upon medical thought, etc. But with a gesture of his hand he waved this aside and pointing to the Salpêtrière he deprecatingly said, "This is my monument." It was the Salpêtrière that he was justly proud of as a school and centre of neurology which he had created and from which had gone out a group of his pupils who themselves later attained eminence, but who were always glad to call Charcot "Master."

As great as were Charcot's contributions to organic medicine, as remarkable as were his researches and as stimulating as was his influence on neurology and medicine, still I think that Charcot's fame in the future is going to rest, in equal proportions, at least, upon his work in the functional diseases and hysteria in particular, for the reason that it was revolutionary. It completely changed the point of view, the thought of the day toward those diseases; so these researches were thoroughly revolutionary.

To fully realize this we must remember that at the time, when Charcot* began these studies, although hysteria had been known for hundreds of years and a great many distinguished physicians had described certain phenomena of the disease, still the whole subject was in a state of chaos and many even doubted its existence as a real disease. So, when Charcot took up hysteria for serious study, the greater number of the medical profession were either indiffren or sceptics. The facts were not coördinated; there was no particular syndrome recognized as characteristic of hysteria; knowledge was in a very inchoate state; in fact, all that had been learned from important researches of many of his predecessors, including

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*This account of Charcot's studies in the field of hysteria is largely based on the "Traité de l'Hystéria" by one of Charcot's distinguished pupils, Gilles de la Tourette, who was intimately associated with Charcot's studies.

Briquet, was threatened with falling into oblivion.

Charcot, it will be remembered, entered the Salpêtrière in 1862, in charge of the section for hysteria. In the Salpêtrière there were numerous cases of the disease and amongst them cases exhibiting convulsive attacks, which were commonly known and had been described as "hystero-epilepsy." At this time it was thought and fully accepted that hystero-epilepsy was a combination of two distinct diseases, epilepsy and hysteria. In the attacks the manifestations of epilepsy might be predominant, or it might be those of hysteria, or both might be equally mixed. In any case, it was a mixture of two distinct and separate diseases.

Charcot, on entering the Salpêtrière, took up this hystero-epileptic syndrome for his first study. He was not satisfied with the traditional and classical conception of the attacks. He recognized for the first time that the convulsions were not like those of epilepsy but were incoördinated and of a purposive character. After many years' observation he reached the conclusion that hysteria and epilepsy were never combined as one syndrome, although the two diseases could exist separately in one individual, each manifesting attacks peculiar to itself; that hystero-epilepsy was not a hybrid, half hysteria and half epilepsy. Hystero-epilepsy was pure hysteria. He saw in it the most obtrusive symptomatic expression of hysteria and consequently termed it "hysteria major," or "grand hysteria." After continuous study through many years, he began, in 1868, his clinical lectures in which he described the true characteristics of the attacks, established its laws and determined in a definite way the relation between hysteria and epilepsy, so that his description of so-called hystero-epilepsy has become classical.

Nevertheless, out of respect for tradition he retained the name "hystero-epilepsy" though, as he said, it troubled him to do so. It was "absurd." Here were two fundamentally different diseases which carried the same name. "There is not," he said, "the least relation between epilepsy and hystero-epilepsy." This conception was revolutionary and this lecture of 1868, which was not published until 1873, is historic, for its ideas were destined to revolutionize the study of hysteria.

In the succeeding years Charcot passed on to make new discoveries in this field. He took up the study of the permanent stigmata, the name which he gave and has made classical for the most characteristic and pathognomonic symptoms of hysteria. What was characteristic of Charcot, himself, was that he brought the same methods of examination and research to the study of this functional disease which he had employed in the study of the organic disease. The heterogeneous phenomena he brought together for the first time as stigmata and correlated in one comprehensive syndrome: the anesthesias, the paralyses, the contractures, the analgesias, the visceral disturbances and those of the special senses, the trophic derangements of joints, etc.

Through his later studies of hypnotic phenomena, begun in 1878, he related all these stigmata to the mind and showed that they had a mental basis and that hysteria was a disease of the mind.

It was in 1872 that Charcot began these comprehensive studies, following those of hystero-epilepsy. It must be remembered, as I have said, in spite of the researches that had been made in hysteria, some of great importance, that most physicians had remained indifferent and sceptical in regard to the disease and therefore it was a sort of revolution of knowledge when Charcot showed, by the presentation of numerous cases of hysteria, the reality, then generally doubted, of anesthesia as one of the symptoms. From this it was only successive steps to the other stigmata.

However important were these contributions of Charcot to medical knowledge, more important still was the great impetus they gave to the study of hysteria in all countries. Limited at first to France amongst his pupils at the Salpêtrière, the interest which Charcot awakened extended farther and farther into all countries of the world. Neurologists everywhere became interested and took up the study. Indeed, as has been said, "Charcot's authority and work stimulated such a great number of writings that it would be difficult to enumerate them."

It was in 1878 that Charcot took up the study of hypnotism as a subject for scientific investigation.* To appreciate his work we must realize that for about twenty years hypnotism had fallen into disrepute and had been abandoned to charlatans, as Janet in his history of the subject points out. It had a bad reputation and men of science did not dare to be occupied with its study. It is easy to understand this situation if we bear in mind that hypnotism was confused with "animal magnetism," its precursor, and animal magnetism had been condemned by the Academy of Sciences in 1840, as a result of the report of a commission which it had appointed to investigate the subject. At that time "animal magnetism" had a tremendous furore and had gathered in amongst its votaries, not only charlatans and the general public (like spiritualism today), but many distinguished physicians, naturalists and philosophers. Numerous societies were formed and many journals devoted to the subject. So the Academy appointed a committee to investigate it. Its report actually denied the reality of the phenomena, now recognized as those of suggestion and dissociation, and attributed everything to fraud. So it gradually died out and every man of science feared to touch anything that smacked of it. Anyone who believed in hypnotic phenomena was considered either a dupe or an accomplice in fraud. Charles Richet alone seems to have been about the only scientist who dared to occupy himself, in a series of studies published 1875-1883, with a scientific investigation of hypnotic phenomena. He refuted the theory of malingering and showed how the phenomena were the result of suggestion.

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*For these historical and other details of Charcot's studies in hypnotism I am indebted to Dr. Pierre Janet, upon whose work, "Les Médications psychologiques," I have freely drawn.

Nevertheless the investigations of Charles Richet, then a young man, did not dissipate the general atmosphere of suspicion and repugnance, nor remove the general incredulity. It required the authority of a greater name.

It was in such circumstances and such an atmosphere that Charcot in 1878 took up the study at the Salpêtrière. It required courage and scientific methods. Charcot had both. In justification of his researches he preluded one of his lectures with a remark which we should take well to heart. "We must never forget," he said, "that we are physicians and nothing that touches medicine ought to leave us indifferent."

So Charcot, approaching the subject with care, sought first to protect himself from the risks of fraud, considered at the time so dangerous, and second, to bring to the study those same scientific methods which he had so successfully employed in the study of the organic diseases and hysteria.

The limited time at my disposal does not permit me to go into the details of his methods or his researches. I must content myself with saying that, as a neurologist, he sought first to simplify the very complicated phenomena to be observed, and to select those that could be examined objectively as physiological phenomena without danger of simulation. For this reason he selected the modifications of the functions of the nerves and muscles, their irritability, the muscular movements, the reflexes, and the alterations of the various susceptibilities. These were examined in hysterics who had been hypnotized by his pupils and then brought before him. (This is a matter of some importance as we shall see.)

In the second place, he gathered around him a brilliant group of collaborators selected from his pupils at the Salpêtrière, Bourneville, Brissaud, Chambard, Paul Richet, Ruault and Londe. These selected and hypnotized the subjects, always hysterics, while Charcot made the examination and the research. Charcot, so Pierre Marie and Pierre Janet tell us, did not hypnotize the patients himself.[*] With that he was not concerned.

He found in the hypnotic state certain abnormal muscular reactions. He found a hyperexcitement of nerves and muscles, so that it sufficed simply to excite them by a blow of a percussion hammer, or kneading of muscle or corresponding nerve, to throw the muscle into strong contractions which persisted more or less tenaciously as contractures and which could be resolved only by certain other procedures. I cannot follow here the successive results of his investigations which soon extended to the states of catalepsy, paralysis, anesthesia, somnambulism, etc., but obviously all his results were logically and necessarily related to the phenomena of hysteria which he had already demonstrated.

As a final result he came to the conclusion that hypnosis was a true phenomenon and could be differentiated into three states, or stages which, historically, have become classical *Lethargy, Catalepsy* and *Somnambulism.* But Charcot considered that hypnoses, limited to these states, were phenomena of hysteria, induced artificially—induced hysteria. Afterwards they became known as "Grand Hypnotism" as opposed to the "Little Hypnotism" of the Nancy school.

Charcot presented his researches before the Academy of Scientists on February 13, 1882, and is declared to have had a veritable triumph. He forced it to accept the veridity of phenomena entirely analogous to those which it had rejected and condemned three times under the title of "animal magnetism." This triumph was due to his authority as an outstanding man of science, to his precise methods of dealing with the purely physiological phenomena of hypnotism which could not be simulated and to the presentation of his facts as symptoms of a particular malady, hysteria. Very likely remorse, as Janet remarks, on the part of some of the members of the Academy had something to do with its reversal of action. Whether the phenomena should be called animal magnetism or hypnotism became a question of name only.

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[*] This statement was questioned later in the meeting by Dr. Farlow, who mentioned that he had himself seen Charcot hypnotize a subject during his *lectures.* Marie, who it will be remembered was a pupil of Charcot and assisted him in his researches, states: "Presque jamais Charcot n'endormait lui-même une malade." Janet, who later worked with Charcot in the study of subconscious phenomena, says: "Charcot qui était considéré dans le public comme le grand hypnotiseur n'a jamais hypnotisé personne. Les sujects qu'on lui amenait avaient déjà été hypnotisés cent fois par d'autres et étaient déjà dressés par ceux-ci à changer d'état sur un signe du professeur. Charcot ne faisait que le signal et, quant le sujet avait l'air de lui obéir, il restait en réalité sous la dépendance d'une autre personne que était le véritable et le seul hypnotiseur."

Therefore the fact is evidently a tradition at the Salpêtrière. These apparently contradictory statements can, I think, be readily reconciled. Charcot's *researches,* of course, were not made in his lectures, but privately with his "pupils." For these his pupils may well have done the hypnotizing, as Marie states. During the lectures he would undoubtedly, for the purpose of demonstration, have repeated before the audience what had been prepared behind the scenes, thus simply rehypnotizing the patient. The phenomena would have already been produced in advance.

and animal magnetism as such was no longer proscribed.

The results of Charcot's authority were remarkable. His researches, as in hysteria, were revolutionary. At once hypnotism was taken up as a subject for scientific study everywhere and innumerable works appeared. Neurologists in all countries examined and reported.

It is true that the Nancy school under the leadership of Bernheim contested successfully the validity of Charcot's three stages, lethargy, catalepsy and somnambulism, and there arose a long and somewhat bitter controversy between the followers of the Nancy and the Salpêtrière schools. In the end the Nancy school won out and it was shown that these stages were artificially and unconsciously induced by suggestion. And it was also shown and accepted after many years, that hypnotic phenomena were not phenomena of a particular malady, hysteria, but could be induced in large numbers of normal people by suggestion. But all this does not matter. What does matter is that Charcot, by the authority of his great name and by his methods of scientific procedure, took hypnotism out of the field of charlatanism and established it as a legitimate and important field for scientific research. If it had not been for Charcot, Bernheim would have received scant hearing and it would have been long before hypnotism would have received recognition as a scientific field of research.

The way in which Charcot's classical three states came to be artificially and unwittingly induced at the Salpêtrière has a curious history. Janet has delved into this history and after a long painstaking inquiry tells us the following story.

No one found these three states outside of the Salpêtrière excepting that Janet found one case exhibiting these phenomena at Havre. He satisfied himself that they were not produced by his own suggestion, or any one connected with the case at Havre, and he was puzzled. He then began a search into the early history of his case. He found, first, on looking into the history of animal magnetism, that these three states were recognized and had been described many years back by magnetizers. He then found that his case, a middle-aged woman, had, when a young girl, been utilized as a subject by certain magnetizers and that at this early period in her career these symptoms had been induced by them. She was therefore an old subject who had been educated in these phenomena. He then set out to investigate the histories of the cases at the Salpêtrière and he discovered that several well known magnetizers had been introduced into the Salpêtrière by Charcot's pupils and had induced these phenomena in the hysterics, amongst whom were those who had been presented to Charcot for his researches. His pupils, therefore, unwittingly had induced the phenomena, which, when the hysterics were brought before Charcot, naturally exhibited them. In this way Charcot was misled into thinking that the "grand" phenomena of hypnotism in hysterics were the three famous "states." But that, as I have said, is of small consequence.

Truly could Charcot say, pointing to the Salpêtrière: "This is my monument."

Dr. J. W. Courtney: My very brief contribution comes under two heads. When Dr. Cushing first broached to me the idea of having this celebration, I took it upon myself to write to several of Charcot's old pupils in Paris, and to ask them to aid in the success of the enterprise by sending me short communications embodying some interesting personal experience with this distinguished teacher. One of my letters was adressed to Charcot's son, Jean, who had studied under his famous father.

The responses were most courteous, generous and interesting. Jean Charcot, who has devoted himself for years to scientific exploration and is known the world over for his antarctic voyages, thus replied—

"On board the 'Pourquoi Pas,' St. Servan,
Ille et Vilain,
21, October, 1925.

Sir:

As I am at present on a scientific cruise on the vessel which I command, I have only just got your letter of October sixth.

I am extremely flattered to learn that the Boston Medical History Club has decided to devote its next meeting to the celebration of my father's centenary; and, while thanking you personally for this decision, I beg of you to present to your colleagues the expression of my gratitude.

My present absence from Paris, and the very near approach of your November meeting make it practically impossible for me to accede to your wishes. In my Paris home I have a complete collection of documents concerning my father, and I would be glad indeed to furnish you with all that might be useful, but I cannot leave my ship at this time, so must content myself with sending you, by this same mail, such as I have at hand on board. I trust that they may contain some of the desired information.

With renewed thanks, please accept, Sir, the expression of my most distinguished and devoted sentiments.

J. Charcot."

With this gracious letter came several interesting items concerning the elder Charcot.

From Dr. Henry Meige, former pupil of Charcot and distinguished for his scientific, literary and artistic attainments, came an expression of the official recognition of our present enterprise, on the part of the Paris Charcot Centenary Committee; also the announcement of the gift to our Medical History Club from the Société de Neurologie de Paris, of a photograph and medal of Charcot, a book on the Salpêtrière and of Dr. Meige's own production "Charcot—artiste."

From Prof. Pierre Marie, also an "ancien" and a man honored and revered in neurological circles throughout the world, we have a reprint of the splendid eulogy pronounced by him at the centenary celebration in Paris, last May, and a letter in which he says, among other things: "Former pupils of Charcot will be very much touched by this great courtesy (the present celebration) of their American neurological colleagues."

Part two of my contribution is the following short account of the manner in which the famous Salpêtrière came into being:

The history of the 17th century in France presents extraordinary contrasts of light and shadow. Even among individuals of high social caste, art and letters flourished side by side with the crassest ignorance and the most amazing superstition. The luxurious and spendthrift habits of Louis XIV and his Court had for their pendant the direst poverty on the part of the peasantry. In strict truth this penury was the direct effect of the Sun-King's incessant need of funds with which to repel invasion, put down sedition and carry on his numerous amours. Of this triad of activities, the last named was by far the most costly, and, to insure its success, levy after levy was made upon the stocking-banks of the peasantry, until not a centime remained. This, however, was not the only hardship Louis' rural subjects were compelled to endure. In the various factional wars that arose, they were invariably oppressed by the victors. Their harvests were ruined, their villages sacked. In fact, they were reduced to such a state of misery and poverty that, forming themselves into desperate bands, they proceeded to invade the cities, notably Paris. Ruined farmers, day laborers out of work, necessitous old men, mercenary soldiers without pay, provincial bandits, workmen whose only remaining possession was their souls, which they continued to retain only because they were not marketable,—all gravitated to the capital; but even there, famine still pursued them. Huddled together in certain dilapidated quarters, without air and without light, this swarming crowd, devoured by vice, vermin and every sort of disease, formed a sort of independent body which took no cognizance of law, religion, superiors or police. In consequence, crime increased in a most alarming fashion. Croisant tells us that, in the course of the year 1642, three hundred and forty-two men were assassinated in the streets of Paris.

Now, it appears that the government arsenal, situated in the southern part of the city of Paris, in a very populous quarter, had blown up twice in the 16th century, causing a decided panic in the community. Whether because of indifference or lack of funds, King and Parliament paid no attention to the petitions addressed to them, to the end of having the recurrence of such catastrophes guarded against.

Louis XIII, struck by the state of dilapidation into which the Arsenal had fallen, finally determined to erect on the *left* bank of the Seine near the end of the rue Poliveau and the station sheds, a small arsenal. At sufficient distance from the river to avoid the danger of floods, several sheds were erected as saltpeter works. A small chapel consecrated to St. Denys and a sort of Grand Chateau completed the group of buildings, to which collectively the name Salpêtrière was given.

During the reign of Louis XIII these constructions employed a large number of hands. During the minority of Louis XIV, and at the time of the troubles incidental to the Fronde, building activity was interrupted; the disorganization was complete; and even the chateau had been abandoned, when the King decided to add the Salpêtrière to the General Hospital. This movement was really forced upon the King by public opinion. Pauperism had reached its apogee. No well-to-do person was safe in the streets of Paris either by day or by night.

The President of the Parliament, Pomponne de Bellievre, was very active in relief work for the poor. Through his efforts large sums of money were collected for the preparation and maintenance of La Salpêtrière as a combination workhouse, hospital and jail. The last-named was divided into four parts,—house of correction, the general jail, prison and the so-called Grande Force.

La Force is still standing. I made a special visit to it in the summer of 1920 and, although the day was sunny and warm, I must confess that a chill took possession of me as I entered the courtyard and saw the bell which summoned so many victims of revolutionary judges to come forth from the gloomy walls of the prison to be butchered like swine.

During the first quarter of the 18th century the poor hysterics who were so unfortunate as to be confined in that part of the institution devoted to nervous diseases were frequently subjected to tortures euphemistically called *aids* or *helps*, designed to bring them out of their various convulsions. The first of these consisted of pointed rods of iron which were plunged into the skin. Incidentally, the operator was astonished to see that these punctures did not bleed. Another aid was to pound upon the stomach with an iron pestle weighing 24 kilograms. A third was to beat upon the body with hammers. Another still was to beat it violently with switches. There were many other aids, not the least revolting being that of dropping a stone weighing about 10 pounds on the breasts of the convulsed person. Generally, however, the desired calm was attained by laying the patient on the ground and having several people stamp on her abdomen.

In the quarters which lodged the mentally upset females, one heard nothing but piercing cries and vociferations. Some of the calmer inmates walked in the courtyards. Their hair was in disorder and their eyes haggard. These poor creatures were constantly maltreated by the girls and by the employees who led them about. They saw enemies everywhere. Their garments were in a state of unspeakable disarray and they lived in the midst of filth, thus differing in nowise from the lowest animals. The disturbed cases were chained to the door of their cubicles and separated from guardians and visitors by a long corridor shut off by iron grating through which they were passed their food and the straw upon which they slept. By means of rakes a part of the filth surrounding them was removed. In the underground cubicles, which were sort of cells six feet square, they received air and daylight by the grated opening in the door. An iron chain which encircled the middle of the patient's body was riveted to the wall. Her feet and hands were bound. All movement was impossible. Naked for the most part and shivering under this damp atmosphere, the unfortunates uttered groans which seemed to come out of the earth itself.

In the winter when the Seine rose, these vile retreats, which were just at the level of the sewers, became not only unspeakably unsanitary, but what is more, they were the refuge of swarms of huge rats, which attacked the wretched inmates at night and gnawed them wherever possible. Oftentimes these bites proved fatal.

With the advent of Pinel in the 18th century the treatment of the insane changed completely. Their manacles were struck off and they were divided into groups according to the nature of their disorders. They were given free access to open air and sunshine, their economic possibilities were developed and an infirmary was installed to care for them when they were attacked by acute intercurrent maladies. In spite of all this edifying improvement, Charcot, nearly a century later, found hysterics and epileptics hospitalized pell-mell with lunatics, and it is upon his superb work in bringing order out of this chaos that not a little of his glory rests.

Dr. Cushing: Dr. Courtney has given us a very vivid picture of the situation, I expect, in all institutions where insane were kept. I think the three things people went to London for in the reign of Queen Anne were to see the lions in the tower, the effigies in Westminster, and the insane at Bedlam.

Dr. Streeter has called my attention to an account of Charcot and the Centenary in Paris by Dr. Fielding H. Garrison. He gives an account of the scenes in Charcot's clinic which is almost as graphic as if he had participated in these scenes himself. It was quite new to me that these patients were all hypnotized before they were brought in to Charcot.

Dr. J. W. Farlow: In the academic year 1878-79 I attended for four months the lectures of Charcot and the clinics at the Salpêtrière. At that time he was much interested in the study of hypnotism and hysteria. This was four years before he was made professor of neurology. I remember seeing him hypnotize some of the patients, chiefly young women, from his clinic. One particularly disquieting experience was a young woman who remained in the hypnotic state for about 36 hours, in spite of all attempts to bring her out, such as pressing on the ovaries, which was thought to be the proper treatment on account of the supposed connection between hypnotism and hysteria and hence the pelvic organs. Charcot was, naturally, much disturbed by this occurrence, and among the medical men attending the clinic there was serious discussion as to whether a person could be put into a hypnotic state from which he could not be brought out. I think that after this Charcot was probably willing to relegate these experiments to his assistants.

In addition to the hypnotism I saw cases of induced catalepsy and various forms of so-called hysterical paralysis and contractions, in which large magnets were used to bring about a transfer of the paralysis from the affected limb to the opposite sound one. These were studied with much interest by Charcot. His deep-set eyes with their penetrating look, his high forehead. his resemblance to an aristocratic monk, or father confessor, made it an easy task for him to overcome the weak-minded patients in his clinic.

Of greater importance were the cases of genuine paralysis and diseases of the joints such as had served as material for his lectures and researches. These were in the large wards of the Salpêtrière, an enormous establishment full of what had hitherto been regarded merely as chronic, obscure, incurable, and hence uninteresting cases until the thorough researches of Charcot showed their true nature.

His lectures in 1879 were not at all the spectacular affairs so clearly described by Dr. Starr. The audience numbered perhaps 50 or more and the subjects treated were particularly the degenerative and sclerotic diseases of the spinal cord. Of these amyotrophic lateral sclerosis and disseminated sclerosis were minutely described, with differentiation from the better known diseases, such as locomotor ataxia. He went deeply into their pathology and illustrated his remarks with original drawings and microscopic sections of the cord, referring often to Duchenne de Boulogne, whose work he appparently valued highly.

As a lecturer, he was quiet, his voice rather mild, and he gave the decided impression of one deeply interested in the pathological and scientific side of his subject. A slight tendency to stoop seemed to indicate that his body was not so vigorous as his mind. The whole picture, however, was of a learned, able, independent-thinking seeker for the truth.

Dr. Cushing: Garrison, in his paper referred to before, notes that, "in order to get the complex semeiology of nervous disorders into the heads of his auditors, Charcot deliberately dramatized and visualized the essential features by demonstrations on a miniature stage, with footlights, upon which he himself mimicked, in a way never before realized, the various attitudes, gaits, tremors, tics, spastic phenomena and other motor and sensory disorders of the neurotic, the typical pathological lesion in each case being thrown upon a screen after the exhibition of the patient. The various imputations to the effect that he was theatrical, that he cared more for the disease than the patient, that he neglected treatment, that he subjected hysterical patients to strenuous tests under hypnotism were, of course, solemn nonsense, dictated by the malice of enemies, usually disgruntled colleagues whose clinics were not so largely attended."

Dr. Starr: I have seen Charcot hypnotize a man. He was in this condition three days, rendered hemiplegic by suggestion, and allowed to go around in that state.

Dr. Prince: Charcot was 57 years of age when in the Chair of Neurology at the Salpêtrière.

Dr. Starr: I do not believe that he demonstrated his patients with any theatrical idea. Little by little his classes grew. If there were 600 men at this meeting, the only way one could show a patient would be by putting him in the limelight.

The fact is brought out particularly by Babinski and by Marie that Charcot made his reputation as a pathologist, that he succeeded Vulpian as a pathologist, only becoming a neurologist later on.

Dr. Cushing: I have always understood that it was a very close call that Charcot received any position at all. The Salpêtrière was a last choice.

Dr. Farlow: I should like to call attention to the popularity of his books. His books had a large sale, comparable to our "best sellers." He wrote in a good style, very clear, his thought well worked out. I was very glad to see at the time that his works were so successful.

Mr. James Ballard: I will show a number of works of Charcot from the Boston Medical Library, including his graduation thesis of 1853 on "Arthritis nodosa," his famous thesis of 1860 on "Chronic Pneumonia" which was submitted for his appointment to the hospital, and first editions and succeeding editions of his publications on "Senile and Chronic Diseases," on "Diseases of the Liver and Kidneys," on "Localisation," his "Lessons on General Nervous Disorders" and a copy of "Lecons du Mardi à la Salpêtrière Policlinique," 1887-88, evidently being notes prepared for students. Charcot was an artist of talent, and in association with Paul Richer wrote and illustrated, "Les Demoniaques dans l'Art," Paris, 1887, and "Les Difformes et les malades dans l'Art," Paris, 1889. Much of his artistic work appeared in the "Iconographie photographique de la Salpêtrière," Paris, 1-3, 1877-1880, and its successor, the "Nouvelle Iconographie de la Salpêtrière," Paris, 1-28, 1888-1918. One of the editions of his work on "Senile Diseases" contains a very interesting letter written by Charcot regarding the book.

MEDICAL HISTORY

FRANCESCO REDI (1626-1697)

W. P. COUES, M.D.

A few years after the landing of the Pilgrim Fathers in the New World, and when Samuel Fuller was battling with the constant epidemics which decimated their ranks there was born in Italy a man who was so far ahead of the general medical thought of the times that his advanced ideas received the scant attention generally meted out to those ahead of their Confrères. In *Aesculape* for July 1925, the work of Viviani concerning this remarkable man is interestingly reviewed. The influence of Galileo, says *Aesculape,* was very great at the end of the XVI century, and had given to science the experimental method, the basis of modern scientific thought. At the same time medicine emerged from empiricism and pure scholasticism, physicians becoming interested in the broad problems of science.

Most of the well known physicians of this time were botanists, naturalists, or chemists. Among the most celebrated of these was Francesco Redi, born at Arezzo, in February 1626. His father was a well known physician. Francesco was placed under the tutelage of the Jesuits of Florence, and later began his medical studies at Pisa. Later he was appointed lecturer on Greek and Latin under Cardinal Colonna at Rome. Here he picked up a vast amount of knowledge by constant reading at the Vatican.

We are told that he returned to Florence after five years at Rome, and began the study of experimental medicine with an ardor seldom if ever surpassed. At the same time he did not give up his literary activities, and learned Hebrew, Spanish, French and Arabic. This work brought him to the attention of the Grand Duke. who caused him to be appointed to the Academy of Crusca, where he was made Archconsul in 1678. He was a friend of the Medicis, and their physician as well.

As a naturalist and biologist his theories were revolutionary. The following paragraphs are taken from his "Traité sur la generation des insectes." Translated, these read, "I am inclined to think that the earth from the very first plant or animal, which it is supposed it has produced from the order of the Most High, has never really of itself produced plant, or tree, or animal, perfect or not, and that all those that are born come from the true sperm of other plants or animals, thus conserving the race."

"I think that all life springs from the paternal sperm, and that flesh, and herbs and other putrefying or putrefiable material have no other office in generation of insects than to furnish a nidus, or appropriate place, where they can lay their eggs, and find proper aliment for their progeny."

The classic experiment of Redi—that of putting putressible material in a sealed jar, so that flies could not come in contact with it, and proving that no life could come from this material under these circumstances, is well known, and ranks with Pasteur's later discoveries.

Redi gave explicit directions for the treatment of wounds, teaching that they should be irrigated with pure water, renewing the teachings of Hippocrates in this matter. He made a profound study of intestinal helminths, taenias the lumbricoides, and others, and turned his attention to external parasites as well.

From worms to sonnets seems a startling departure, but Redi achieved much fame as a poet, his best known work in this connection being his famous "Bacchus en Toscane" which, according to Viviani, had its origin from the French ballet.

Redi died of apoplexy in Pisa in 1697 the significance of his epoch making discoveries not being grasped until the time of Pasteur.

LARREY AND THE EPIDEMIC OF OPHTHALMIA IN EGYPT

W. P. COUES, M.D.

As time goes on the achievements of the greatest of military surgeons seem ever more remarkable. To have accomplished what he had done seems impossible. To have found the time, often amid seemingly prohibitive circumstances, to write about it, is one of the medical wonders of the ages.

Velpeau looked with quiet scorn on some of his "*eléves*" who said, "they were too busy to write," they should have been with Larrey in the Egyptian desert watching the master work and then writing immediately of what he had done and observed.

Barbillon, (*Paris Medical,* March, 1925,) reviews Larrey's treatise on the epidemic ophthalmia of Egypt, as recounted in *Aesculape,* for March 1925.

High tribute is paid to the pure and dignified style of this treatise, which forms part of the Egyptian "Campaign's Militaire."

Barbillon says, "Here is a man of action, devoted to duty, and with a conscience, who talks to you; and in his pages, where you can almost hear the cry of suffering, and see the blood run, there is nothing theatrical, all is restrained, and on this account the pages are all the more moving, showing us the heroic stoicism and the resigned courage of the soldier under his humble shako, or of one under the great chapeau of a marshal of France."

As soon as the army penetrated into the Egyptian desert, with Cairo as the objective, epidemic ophthalmia made its appearance, and increased from day to day. When the army reached Cairo Larrey organized a plan for systematic treatment of those affected. At this time, we are told there was no treatise on ophthalmia as such. Physicians were uncertain or divided as to the best treatment of this apparently new malady, and up to this time the cases had been left to the ministrations of empirics. Larrey drew up his plan for treatment and presented it to the Institute at Cairo. This treatise, says Barbillon, was of the first order. When we consider that this work was done in a torrid and exhausting climate, in the midst of a campaign where Larrey had a thousand things to think of and direct, one is lost in admiration of the genius of this extraordinary man. All his biographers give tribute to his warm heart, and nobility of character, which added to his great surgical accomplishments have endeared him to generations of his compatriots.

Case Records
# of the
Massachusetts General Hospital

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY
RICHARD C. CABOT, M.D., AND HUGH CABOT, M.D.
F. M. PAINTER, A.B., ASSISTANT EDITOR

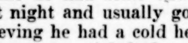
CASE 12011

MEDICAL DEPARTMENT

An Irish-American teamster sixty years old entered July 26 complaining of a "cold" with dyspnea of a month's duration. He was so deaf and talked with so much effort because of dyspnea that the history is unreliable. He had always been a strong, vigorous man and had done manual labor. He had used alcohol, but not to excess, and during the past year had used none. He had been getting deaf for two years.

A month before admission he began to have marked dyspnea and had to sit down and rest frequently at his work. For some time he had noticed that his heart pounded extremely on moderate exertion. Recently this had become worse, and with it he had had some knife-like precordial pain, not radiating. At the same time he had some edema of the ankles, worse at night and usually gone in the morning. Believing he had a cold he continued to work, getting more "choked up." He had morning cough with considerable white sputum. He never slept on more than two pillows. Two weeks before admission he stopped work and spent most of his time in bed. During his illness he urinated five or six times by day and two or three at night. At the time he stopped work he began to have excessive generalized itching. A week before admission he began to be "bloated" all over, especially on the legs, hips and face.

Upon examination he was fairly well nourished. The skin was red, dry and harsh, with generalized eczema. A skin consultant reported "senile atrophic skin with possible jaundice," ordered a liniment* and stated, "Superficial X-ray is very effective in relieving this type of pruritus." There were many decayed teeth and moderate pyorrhea. The tongue showed some atrophy around the edges. The apex impulse of the heart is not recorded. The percussion measurements are shown in the diagram. The heart was enlarged downward and to the left. A harsh systolic murmur was heard over the entire precordia. Electrocardiogram showed normal rhythm, rate 100. The blood pressure was 150/90. There were râles at the bases of both lungs. The abdomen was filled with fluid. The liver was not felt. There was moderate pitting edema of both legs On the right shin was a wound with slight discharge. The left lower leg showed old healed varicose ulceration. The pupils and reflexes were normal.



The temperature and respirations were normal. The pulse was 81 to 110. The amount of urine is not recorded; specific gravity 1.020 to 1.010, a large trace to a trace of albumin at both of two examinations, occasional red blood corpuscles and rare leucocytes at one. Renal function 0. Hemoglobin 30 per cent. at two examinations, leucocytes 4,000 to 4,350, polynuclears 70 to 63 per cent., reds 3,000,000 to 2,200,000, with achromia at one of two examinations, moderate variation in size at one. A Wassermann was negative. The non-protein nitrogen was 120 to 170 mgm. The uric acid was 8.8, creatinin 7.3, calcium 7.8 mgm. per 100 c.c. of plasma, inorganic phosphates 6.5 per 100 c.c. of plasma, CO_2 combining power 11 per cent.

Orders: July 26 soft solid diet, liquids to 1000 c.c., digitalis gr. iss t.i.d., saturated solution of KI ten drops p.c. t.i.d. July 27 salt free low protein diet, magnesium sulphate one ounce every morning, morphia gr. 1/8 with hyoscin 1/200 if necessary and repeat morphia gr. 1/8 in an hour if necessary. July 28 paraldehyde ʒ i immediately and 10 minims intravenously, morphia gr. 1/6 immediately, chloral hydrate gr. x in one hour if necessary, rectal glucose 5 per cent. ℥ vi every four hours, zinc oxid wash† every four hours, chloral hydrate gr. xv and repeat gr. v p.r.n. (The patient would not take this by mouth.) Chloral hydrate gr. xx by rectum, pantopon gr. 1/3 by mouth.

The morning after admission the breath was ammoniacal. The breathing was still stertorous and the patient had a dry look. July 28 he was on the verge of coma and was mentally confused. Sedatives had little effect. July 29 he went into coma and July 30 died.

DISCUSSION

BY RICHARD C. CABOT, M.D.

NOTES ON THE PHYSICAL EXAMINATION

The diagram shows a total diameter of 17.5 cm., which would certainly be abnormal. 7 cm. at the base would not be abnormal.

The non-protein nitrogen, creatinin, etc., are all high.

DIFFERENTIAL DIAGNOSIS

I do not see any reason to doubt that he died of uremia from chronic nephritis, with a hypertrophied and dilated heart. What have we to support that diagnosis? (1) A zero renal function and a high though not tremendously high non-protein nitrogen, high creatinin, and all the other retention products. (2) Then we have a man who does not die apparently of passive congestion, but rather of coma with mental confusion, who has a generalized edema just as much in one part of his body as another, not at all atypical from the point of view of nephritis.

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*Calamin ointment 250, spirits of camphor 16, apply p.r.n. unless there is some contraindication.

†Zinc oxid ʒ ii, calamin ʒ i, glycerin ʒ ii, phenol 20 minims, water to make ℥ viii.

I doubt whether his eczema has any particular bearing on the case. Of course he might have had that without any of these serious symptoms. We see that he got along until the age of sixty years without any serious trouble.

The blood pressure is not particularly high. I do not think anyone could draw any important conclusions from that one way or the other. It is perfectly compatible with a chronic nephritis. He apparently has no arrhythmia at all and not much in the way of failing compensation on the part of the heart. We can hardly account for his uremia unless from nephritis.

So I should say the proper diagnosis is chronic nephritis, presumably of the arteriosclerotic type, with hypertrophy and dilatation of the heart, general passive congestion, and secondary anemia. If there is any terminal infection it does not make itself known by any facts given to us.

He has, we notice, some knife-like precordial pain. That is not described in any way so that we can definitely say that it is angina pectoris It might have been due to gas in his stomach, often the cause of such pain, or merely to distress going with a failing heart.

Dr. Young: Is this dyspnea due simply to failing compensation, or is there a toxic cause?

Dr. Cabot: Certainly the patient was toxic at the end. So it is natural here to say that at least a part of his dyspnea is toxic.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Arteriosclerosis.
Arteriosclerotic heart disease.
Arteriosclerotic nephritis.
Congestive failure.
Uremia.

DR. RICHARD C. CABOT'S DIAGNOSIS

Chronic arteriosclerotic nephritis.
Hypertrophy and dilatation of the heart.
Chronic passive congestion.
Secondary anemia.

ANATOMICAL DIAGNOSIS

1. *Primary fatal lesion*

Arteriosclerotic nephritis with cysts.

2. *Secondary or terminal lesions*

Hypertrophy and dilatation of the heart.
Chronic passive congestion.
Beginning hydrothorax, hydropericardium and ascites.

3. *Historical landmarks*

Slightly defective closure of the foramen ovale.
Chronic pleuritis, right.
Arteriosclerosis.

Dr. Richardson: He was a man of large frame, and fairly well nourished. We should not think anything about it if his heart weighed 350 grams, but it did weigh 585 grams. That is considerably enlarged. The outward description of the body was practically as given in the clinical record. In the peritoneal cavity there was a small amount of pale clear fluid; beginning ascites. The appendix was negative, the gastro-intestinal tract negative except for beginning congestion. The mesenteric and retroperitoneal glands were negative. The liver was 5 cm. below the costal border. The diaphragm on the right was at the fifth interspace, on the left at the lower border of the sixth rib, indicating if anything that we shall probably find some fluid in the pleural cavities.

In the right pleural cavity there was at least 200 c.c. of thin pale fluid, in the left at least 400 c.c., the beginnings of hydrothorax. There were the usual old membranous adhesions on the right, but none on the left.

The trachea and bronchi contained much thin brownish red fluid, indicative of congestion of the lungs, which was present. The lungs were rather voluminous, but showed no areas of consolidation, and were saturated with thin pale brownish-red frothy gray fluid,—passive congestion.

There was 350 c.c. of fluid in the pericardium, but it was otherwise negative; beginning hydropericardium. The heart weighed 585 grams, with a good myocardium that was thick, pale brown-red, and showed no definite evidence of fibrous myocarditis macroscopically. The microscopic section however showed a few areas of fibrous myocarditis,—nothing of any extent. The valve circumferences were: mitral 11.5 cm., aortic 7.5 cm., tricuspid 14.5 cm., pulmonary 8.5 cm., all increased, but other than for the usual sclerosis that appears on valves at this age, being perhaps rather well marked on the aortic, they were negative. The sclerosis then in these valves was all of the arteriosclerotic type and not chronic endocarditis. The coronaries were free, capacious, and showed only a slight amount of fibrous sclerosis.

The aorta above the diaphragm showed a slight amount of fibrous sclerosis, and in the arch an area of atheroma; in the abdominal portion a slight amount of fibrous sclerosis, and in the great branches a moderate amount of fibrous sclerosis, rather well marked in the renals. The vascular apparatus otherwise was negative.

The liver was rather large, 2080 grams (normally 1200-2400), and showed some congestion. The spleen was moderately enlarged, 440 grams, (normally 80-180). The tissue was plump, brown-red, bloody; congestion.

The combined weight of the kidneys was 290 grams. It so happens that these were kidneys of arteriosclerotic nephritis. Osler a great many years ago called attention to the fact that the kidneys in cases of arteriosclerotic nephritis seem to weigh more than in chronic nephritis from other causes. This would be 145 grams for each kidney, which is a fair weight. Still there is a well established arteriosclerotic nephritis in this case. The capsules showed a few adhesions. Stripping them left a finely granular surface. The tissue was tough, the markings indistinct and the cut ends of the vessels prominent.

DR. CABOT: Does the weight of the kidney in cases like this depend to any considerable extent on edema?

DR. RICHARDSON: It does in some cases. In addition, in each kidney there were several cysts about three centimeters across.

Culture from the heart blood showed no growth.

Microscopic examination confirms all that we have said. There was extensive atrophy of the renal tissue with well marked fibrosis. The mechanism of death: there is the vascular apparatus and the respiratory apparatus. Anatomically here the vascular apparatus showed well marked changes.

DR. CABOT: Am I right in my impression that outside of the kidney the amount of arteriosclerosis is not great? That it is mostly in the kidney?

DR. RICHARDSON: Moderate, most marked in the kidneys.

CASE 12012

SURGICAL DEPARTMENT

A married woman forty-eight years old of Irish parentage entered August 25 complaining of jaundice and "shock." Her father died of apoplexy. She had had no illnesses except pneumonia in childhood. She had never been pregnant. For four years her bowels had been irregular and she had urinated once at night.

Two and a half years before admission she had a sudden "shock" with paralysis of the left leg, profuse epistaxis and severe headache, but without loss of consciousness. After three weeks she was able to be up and was free from symptoms. Eight months before admission she felt herself falling and lost consciousness for two days. She woke up with lost memory, total left hemiplegia, and inability to talk. She could hear some words but not others. The paralysis, loss of speech, etc., gradually improved. Her memory had not completely returned. After this attack she had no headache, failing vision, edema or other evidence of hypertension. Five weeks before admission jaundice began slowly to develop, reaching its maximum intensity in four weeks. Her stools became clay colored and her urine reddish. There was no pain. Two weeks before admission she began to have vomiting, almost projectile, immediately after each meal without previous nausea. After a week this stopped. She thought she had lost considerable weight since the onset of the jaundice.

The patient's physician wrote that for a year she had had a systolic blood pressure of 230 to 260. She was treated three months before admission with Bulgarian bacillus. The pressure dropped in a month and remained at 160 until the appearance of jaundice four weeks before admission. At that time the pressure dropped to 110, then rose to 150. The jaundice was slight for three weeks, but had deepened in the past week.

Examination showed a well nourished, heavily built woman, not clear mentally, with facial paralysis and slow thick speech. The skin and sclerae were very yellow. The apex impulse of the heart was not found. The heart and vessels seemed good. The blood pressure was 220/140 at entrance, 150/92 August 28. There was tenderness and spasm in the right upper quadrant. The grip of the left hand was weak. The rest of the examination was negative.

Before operation the temperature was 100.2° falling to normal, the pulse 100 to 62, the respiration 20 to 28. The urine was dark, cloudy, specific gravity 1.016 to 1.020, 25 to occasional leucocytes per high power field. The hemoglobin was 85 per cent., the leucocytes 6,600. The bleeding time was three minutes, the clotting time 2½ to 5 minutes. The clot retraction was good. The icteric index was 50+. Van den Bergh's test gave a strong immediate direct reaction, a very strong indirect reaction. X-ray showed just lateral to the transverse process of the fifth lumbar vertebra a rounded shadow of increased density which was lower and more dense than the usual gallstone shadow and suggested a calcified gland or possibly the ureteral shadow.

The patient was incontinent of urine most of the time. The stools were clay colored. A medical consultant advised operation.

August 29 operation was done. After it the patient remained in a semistupor which deepened into profound coma. There was very little drainage from the tube or into the dressing. Suction was put on the tube with very little result. Upon catheterization thirty ounces of urine was obtained. Her legs became edematous and her skin profoundly jaundiced. September 2 she died.

Discussion

BY EDWARD L. YOUNG, JR., M.D.

They don't treat blood pressure with Bulgarian bacillus, do they?

Dr. Cabot: They treat it with all sorts of things, but it does not have any effect.

Dr. Young: It would suggest to me that she did have gastro-intestinal symptoms, because of course that is the commonest reason for the use of it in the intestinal tract, that is, taken by mouth.

Now, forty-five and a half is very young to have a cerebral hemorrhage. In fact it is young to be carrying a blood pressure of 230 to 260. It always suggests the possibility of specific disease as a background. The first attack of course may have been the so-called vascular spasm, because it cleared up very quickly. The second one would seem to have some symptoms left behind which do not last so long as that following the so-called vascular spasm. Doesn't that generally clear up pretty quickly?

Dr. Cabot: Yes. That is part of the diagnosis. If it does not we change the diagnosis.

Dr. Young: The blood pressure backs up the variability which we are told about,—that is from 230 to 260 ordinarily, then down to 220 and 150. Was a Wassermann done?

Miss Painter: There is no record of it.

Dr. Young: And was there any note about whether or not the liver dullness seemed to be changed?

Miss Painter: The liver edge was not felt, and there is no record of enlargement.

Dr. Young: This urine examination is not worth much, because it is not stated that this is a catheter specimen. It does not say whether the dark color was due to bile.

Miss Painter: Bile is not mentioned.

Dr. Young: On the basis of normal about 5. this icteric index is of course very high. As I understand the van den Bergh test this means both destruction and blocking.

Dr. Chester Jones: I think in the direct test it is supposed to mean an obstructive type of jaundice, and when we have a direct test that is strong we always get a strong indirect too.

Dr. Young: So that this is consistent with a mechanical blocking.

Of course this shadow is very low, but a large gall-bladder can show a shadow as low as that. So that it does not rule out stone. But on the other hand, if it is a stone, to be as low as that it is in the gall-bladder and would not be blocking the common duct.

What is the diagnosis in this case? It is painless jaundice in a comparatively young woman who has had high blood pressure for some time, with cerebral hemorrhage a short time before. It has been progressing for five weeks. She has complete absence of bile in the stools; and the dark urine of course means at least a fair amount of bile in the urine. Can it be the commonest type, which is stone in the common duct? It certainly can, even if there is an absence of pain. Painless jaundice on the other hand always suggests malignancy of the head of the pancreas. When that is present it is often possible either to palpate or percuss the enlarged bladder, because the slow back pressure without inflammatory contraction results in the dilated gall-bladder in many cases. No mention is made here of that. Can it be a destructive process? I see no reason why it should not be. I mean by that the type that we have been seeing more of in the last few years, commonly called acute yellow atrophy, the acute toxic process. I do not see any way, on the story as we have it here, of telling any more accurately than that. The loss of weight which she speaks of has gone on since the onset of the jaundice. Of course she has vomited, the nutrition is poor, and there could be a normal loss.

What is there to do about it? It seems to me the only thing that can be done is to bet on its being a condition which can be helped by operation, because if it is one of the other rarer conditions the prognosis is poor in any event, and although it is true that surgical drainage had not been beneficial there is no reason to think it will do any possible harm. If it turns out to be a stone, as it occasionally does, a cure is possible; if it turns out to be a cancer of the head of the pancreas no harm has been done, and sidetracking sometimes helps for the time being; and if it turns out to be acute yellow atrophy again we cannot spoil a bad egg.

Here is what Dr. Jones said: "I think the chances are in favor of cholelithiasis. The story of indigestion and gas for two years is more suggestive of gall-bladder than not. Exploration indicated."

Dr. Jones: The story was not all in the history. I talked to her for some time and she gave a history of attacks of indigestion that were rather indefinite, and of a good deal of gas for two years. She was a large woman in the forties, and it seemed to me quite probable that she had gall-stones. It seemed to me that while she might have malignancy and gall-stones, the chances were just as good of its being only gall-stones. So far as the loss of weight is concerned, I think we get a tremendous loss of weight in any continuous jaundice.

Dr. Young: We had guessed at her indigestion because they had fed her Bulgarian bacillus, which is a popular remedy for gas.

Then we will go in on that basis and see what we find. The question of preparatory treatment is interesting. It is routine here to use calcium chlorid for at least two or preferably three days previous to operation in all the jaundice cases, on the West service at least. The question of anesthesia is interesting. I think blood pressure is not a contraindication to general anesthesia carefully given. Nevertheless in this case it seems wiser to open the abdomen under local and to establish a great many facts. Then if it were found that something more had to be done the tension of which caused pain, a general anesthetic could be given at that time.

DR. YOUNG'S PRE-OPERATIVE DIAGNOSIS

Cholelithiasis?
Cancer of the head of the pancreas?
Acute yellow atrophy?

PRE-OPERATIVE DIAGNOSIS

Carcinoma of the pancreas.

OPERATION

The operation was started under novocain and finished under ethylene. A definite mass was felt in the region of the head of the pancreas and was thought to be cancer, although this was not positive. There were several stones in the gall-bladder. The gall-bladder was drained and the stones snipped out. A large rubber tube was placed in the fundus for drainage. The patient's condition on the table became very poor, and any attempt at anastomosis would have been inadvisable.

FURTHER DISCUSSION

It is very hard to tell what the head of the pancreas is like. It is the easiest thing in the world to say that it feels abnormal and have it turn out later to be perfectly normal. This surgeon recognized that fact.

I do not think there is anything further to say except that the condition from which she was suffering plus the operation was more than she could stand. Of course it is true that a patient who was apparently no more damaged than this woman was by this alone ought not to die in three days from that operation. But I see no reason to assume anything else from the history. Is there anything more, Dr. Jones, in the light of what that operation showed?

DR. JONES: I think this case falls into the general group where if there is any operating to be done at all it ought to be done as early as possible.

DR. YOUNG: You mean as early as possible in the jaundice?

DR. JONES: Yes.

DR. CABOT: It seems to me that in these exercises as I have watched them over a good many years I have seen a great change in this matter of palpation of the pancreas. Boston surgeons, like all others, used to be perfectly sure that they could feel the head and therein recognize chronic pancreatitis. Now what I seem to see is that while all other surgeons still think they can, Boston surgeons have become a little wiser.

DR. YOUNG: Why not put it "a little more honest?" The thing that bothers me is this: it says there was a little drainage from the tube and nothing was got from suction. It seems to me that if this was the situation there ought to be profuse drainage of bile from the tube behind this obstruction unless she was *in extremis*, and this was done really at the very last minute.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Carcinoma of the head of the pancreas.
Apoplexy (old).
Obstructive jaundice, with cholemia.
Cholecystotomy.

DR. EDWARD L. YOUNG'S DIAGNOSIS

Cancer of the pancreas?
Stone in the common duct?
Acute yellow atrophy?

ANATOMICAL DIAGNOSIS

1. *Primary fatal lesions*

(Cholelithiasis.)
Subacute pancreatitis with parapancreatic and peripancreatic focal fat necrosis.

2 *Secondary or terminal lesions*

Slight diphtheritic cholecystitis.
Icterus.
Slight chronic pericholecystitis.
Arteriosclerosis of the vessels of Willis
Scattered small areas of softening of the brain.
Focal pneumonia.
Hemorrhagic edema of the lungs.
Slight hydrothorax.

3. *Historical landmarks*

Cholecystotomy.
Slight arteriosclerosis.
Slight hypertrophy and dilatation of the heart.
Slight chronic pleuritis, right.
Fibromyomas of the uterus.
Edema piae.
Scattered cutaneous hemorrhages.

DR. RICHARDSON: She was a well developed and nourished white woman. The pia was markedly infiltrated with thin pale fluid, and there was arteriosclerosis of the vessels of Willis. The brain itself weighed 1357 grams. On the right side, in the region of the posterior portion of the lenticular nucleus there was a small area of brownish softening. On the left side in the region of the white matter at the left lateral border of the lenticular nucleus there was a small pale area of cystic softening. In the nucleus just below the internal capsule there was a small area of brownish cystic softening. These areas were from 5 to 10 mm. across. The brain was otherwise negative.

Trunk. The conjunctivae and skin showed a marked saffron yellow color, and on the outer aspect of the right arm—did you mention any hemorrhages of the skin?

Dr. Young: The record did not mention any.

Dr. Richardson: There was in the region of the elbow a purplish area, another on the back of the right hand, and one on the outer aspect of the left upper arm. On the anterior thoracic wall well below the pectoral on the right were two areas, and between the pubes and the umbilicus there were several purplish areas.

In the peritoneal cavity there was a small amount of thin bile-stained fluid. The appendix was negative. The esophagus, stomach, and intestines were negative. The large intestine contained much clay-colored fecal material in smaller and larger rather firm masses. There is a note on the small intestine which we will speak of a little further on. The duodenum was considerably pressed upon and flattened by the enlarged head of the pancreas. The liver was at the costal border. The diaphragm was at the fourth rib on the right, at the fifth interspace on the left.

In the left pleural cavtiy there was 200 c.c. of thin bile-stained fluid. On the right side there was 1000 c.c. of a similar fluid. There were a few old adhesions on the right, none on the left. The trachea and bronchi contained much bile-stained frothy fluid. The pleura over the lungs showed smaller and larger scattered hemorrhagic areas, and in one or two places there were small foci of pneumonia.

The pericardium was negative. The heart weighed 345 grams,—slightly enlarged for her. There was a good myocardium and the valves were negative. The coronaries were free and fairly capacious, showing a slight amount of fibrous sclerosis. The aorta showed a slight to moderate amount of fibrous sclerosis, and there was a slight amount of sclerosis in the great branches. The liver weighed 1430 grams, the surfaces were smooth, the tissues of good consistence and bile-stained. The microscopic examination was negative.

The gall-bladder showed the operation wound in the fundus. I found no stones in the bladder or in the ducts. The mucosa was negative except for a small patch of diphtheritic cystitis. The ducts were free. The only thing of note was that the common duct where it ran along the enlarged head of the pancreas was considerably pressed upon by the pancreas, which also flattened the duodenum.

The tail and the greater part of the body of the pancreas were negative. The head was enlarged, swollen, eight by seven by five cm., and the tissue in the region of the head on section was plump, rather firm, and pale greenish brown. There were innumerable pale bile-stained necrotic areas,—pancreatitis. These were scattered, but were best marked in the peripheries. They also extended into the root of the mesentery and to some extent into the perirenal fat in the region of the pelvis of the kidney as well as into the peripancreatic tissue. The duct of Wirsung was negative.

The spleen, adrenals and kidneys were negative—of course bile-stained—and the pelvis and ureters were negative. The bladder was negative, the mucosa bile-stained. The uterus and adnexa were negative except that in the region of the posterior wall of the uterus were three fibromyomata.

Dr. Young: Was the common duct dilated at all?

Dr. Richardson: No. The common duct was rather small.

Dr. Young: In other words, there is an interesting possible connection between the cholecystitis and the pancreatitis, but not the immediate cause that we sometimes find with a dilated common duct and perhaps a stone itself in the papilla. We have to assume that if there is any connection here it is direct lymphatic transference of infection between the biliary tract and the pancreas. Did they take a culture at the time of the operation? That is meant to be done as a matter of routine, and it would be interesting to know if it showed growth.

Miss Painter: There is no record.

Dr. Cabot: Your belief was that the jaundice in this case was due to pressure on the common duct by the pancreas?

Dr. Richardson: That is the only evidence we found. Of course there might have been a stone there previously, but at the time of necropsy there seemed to be pressure enough to cause jaundice.

Dr. Cabot: And if there had been stones you would have been likely to see signs of them in the size of the ducts?

Dr. Richardson: One would think so.

Dr. Cabot: Still the stones were probably later than the pancreatitis.

Dr. Richardson: I should think so.

CASE 12013*

Orthopedic Department

A Syrian twenty-four years old entered November 7 complaining of pain and swelling in the left knee of three years' duration. The family history was unimportant. The past history was negative except for Neisser infection four years ago.

Three years ago the knee suddenly began to swell and get stiff. At the end of a week it was the present size. Since that time it has not changed except in consistency. This change took place after hospitalization, during which time "an oily substance" was injected into the joint. Within a week after this medication the consistence became that which is present now.

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*Presented at the monthly clinical staff meeting at the Massachusetts General Hospital December 10, 1925.

Examination showed a quadrilateral bulging on the anterior aspect of the left knee. Above and below the patella were symmetrical bulges overlying masses which felt semicartilaginous or myxomatous in character. There were also tumor-like masses over the medial and lateral aspects. The knee was permanently flexed at 20° and could be flexed to 90°. The joint was not painful. There was marked crepitas on motion. No fluid wave transmission could be demonstrated. Two Wassermanns were negative. Tuberculin tests, both human and bovine, were positive.

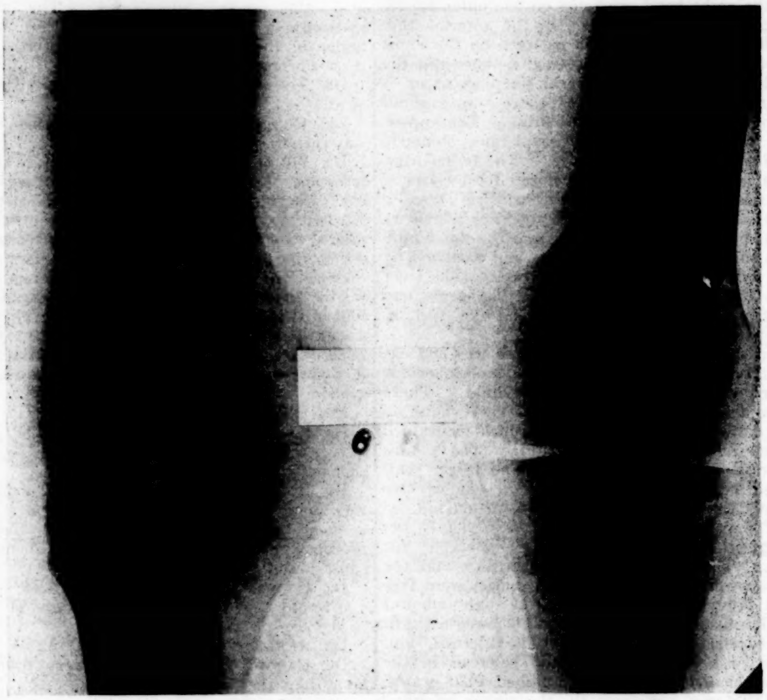

PLATE I. Shows marked thickening of the soft tissues about the left knee joint and very slight bone atrophy. The joint space is narrowed and its outline irregular. The appearance is that of a destructive process involving the knee joint.

November 10 biopsy was done. At this time the mass was found to be several centimeters thick. It appeared to be closely allied with the synovial membrane and of a firm fibrous consistency. There was very little fluid in the joint. The bone and cartilage were eroded.

November 17 operation was done.

Discussion

BY JOHN A. JUDY, M.D.

The pathological report on the biopsy in this case was, "Small firm fibrous fragments showing on microscopic examination cellular growth composed of small mononuclear cells and numerous foreign body giant cells. Many areas of fibrosis and degeneration." The bacteriological report on a culture was "No growth."

On November 17 arthrotomy and removal of the tumor was done. The tumor was found to be closely associated with the entire synovial membrane and of a firm fibrous consistency. There was much roughening and erosion of the bone and cartilage. The pathological report was, "Large fibrous and fatty fragments one of the surfaces of which is covered with a thick purplish membrane. Microscopic examination shows a structure of small mononuclear wandering cells and multinuclear giant cells with new-formed blood vessels. There is a fibrous stroma which forms long hyalin bundles. In places this stroma is more abundant and forms an intercellular substance in which single cells are embedded. The histologic appearances somewhat resemble giant cell tumor. It is a chronic inflammatory process."

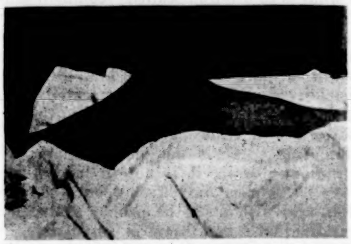

PLATE II. Photograph after biopsy and before operation.

In collecting data on this case we wrote to the hospital where he was treated three years ago. This is the reply: "On June 17, 1922, a diagnostic puncture of the knee joint revealed a turbid fluid containing some pus cells. This fluid was reported negative for gonococci. The type of infection was never determined. No guinea pig inoculation was done. The joint was flushed several times with normal saline and a two per cent. formalin and glycerin injected. This treatment was repeated several times and his temperature and pulse became normal. He seemed generally improved when he left the hospital." The clinical diagnosis that we made before we had this report was foreign body giant cell tumor of the synovial membrane. It seemed to me of interest, because we could find no place where such a tumor had been reported in literature.

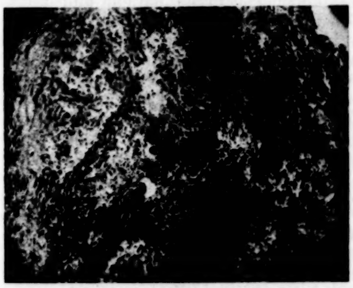

PLATE III. Characteristic pathological section of tumor. Photomicrograph by Dr. Albert E. Steele.
DR. NATHANIEL ALLISON.

Dr. Holmes: In going over the giant cell tumors with Dr. Codman I saw in all about a hundred cases, including those that we had here at the hospital, those at the medical school, and the collection of bone sarcomas; and there was no case that showed definite involvement of the joint. This case is extremely unusual. These tumors go down to the joint surface but do not invade it. They may extend into the transverse processes of the vertebrae or along ligaments, but do not cross joints. It is very rare.

Dr. Judy: The patient is making an uneventful convalescence. The motion of the knee is practically the same as before the operation. He has not attempted weight bearing as yet.

NOTE BY DR. NATHANIEL ALLISON

The history of the use of two per cent. formalin as an antiseptic in infectious arthritis has been actually discovered in this patient. The effect of this solution upon the joint tissues, especially the synovial membrane, is here made clear. The period of three years which has elapsed since this formalin treatment was carried out with practically no acute inflammatory changes in the knee joint structures, or in general health, inclines me to believe that the fluid has produced all the changes which are shown in the histological sections of the tissue removed at operation. These changes indicate reaction of the synovial membrane to a chronic chemical irritation. The synovial membrane has become tremendously thick. Its appearance resembles that of a foreign body giant cell tumor. There is no confusion here between a chronic inflammatory process due to bacterial causes and one due to chronic chemical irritation of the synovial membrane. As far as I know, this is the only case of this type reported in medical literature. Dr. J. Homer Wright informs me that he has seen a similar growth occur in the sheaths of tendons, but not in the synovial membrane.

The operation was done for the purpose of relieving the knee joint of the tumor mass, there being no evidence to support the belief that it might be a metastasizing tumor. At operation it was found that the growth extended exactly through the area occupied by the synovial membrane, and that this is in fact a benign tumor, the result of chemical irritation of the synovial membrane itself.

The prognosis, I believe, is very good. At the present time the patient has good motion in his knee, which should increase with joint function. The erosion of the cartilages and of the margins of the bone about the articular cartilages indicates only the presence of a chronic inflammatory process within the joint cavity.

DIAGNOSIS

Giant cell tumor of synovia due to chemical irritant.

THE BOSTON
Medical and Surgical Journal

Established in 1828

Published by The Massachusetts Medical Society under the jurisdiction of the following-named committee:

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Subscription Terms: *$6.00 per year in advance, postage paid for the United States, $7.56 per year for all foreign countries belonging to the Postal Union.*

Material for early publication should be received not later than noon on Saturday. Orders for reprints must be sent to the Journal office, 126 Massachusetts Ave.

The Journal does not hold itself responsible for statements made by any contributor.

Communications should be addressed to The Boston Medical and Surgical Journal, 126 Massachusetts Ave., Boston, Mass.

WHAT PRICE "HEALTH EXAMINATIONS"?

There is no question of the wisdom of periodic health examinations. Designed to detect disease in its early and curable stages and to furnish the individual with advice which will bring about the cure, or at least retard the progress, of any abnormal condition thus detected, such a system should operate for longer life, greater efficiency, and the increased happiness of humanity in general. But as it is at present applied to individuals, its usefulness may be questioned.

As one result of the desirability of these periodic examinations, numerous commercial "clinics" and "institutes" have sprung up, bearing with them the suggestion that it is only through such organizations that a thorough "stocktaking" can be had, since it is beyond the ability of any one physician to carry out an examination which will detect any and all signs of incipient disease.

If this is a fact, our medical schools have been weighed and found wanting. It is true that the average doctor does not possess all the apparatus ("scenery," a patient recently called it) found in the large clinics, but it is equally true that in the vast majority of cases such apparatus is not needed for the satisfactory examination of the patient. Garland[1] has recently described the method of carrying out an ideal health (or sickness) examination, and the material needs which he regards as essential are no more than should be in the equipment of every internist and general practitioner. The needs that are essential are interest in the individual patient, time, training, and what is so often miscalled "common sense." And finally, there is needed a knowledge of the patient's environment, intellectual equipment, and emotional reactions, which can be had only through acquaintance with him. This, his physician acquires through repeated contact with his patients under various conditions, and this the health clinic can rarely obtain in one examination. It is not in the blank which the patient fills in, it is not in laboratory reports. It comes only from continued observation, and without it the proper evaluation of an individual's condition is impossible. In many instances, the report from the "clinic" to the patient is dictated, by a man who never saw him, wholly on the basis of the various findings of those who made the examinations. This is a handicap far greater than the lack of complicated "instruments of precision."

The fundamental objection to the commercial clinics, however, is that they operate to destroy the confidence between patient and physician which is essential if the former is to obtain the best kind of medical care. When a patient receives a report advising him to have an electrocardiogram or a chemical examination of his blood made, or to consult specialists because of defects he never knew existed, it carries to him the suggestion that his physician has been careless or ignorant because he has not recommended the same measures. Yet the physician may have had sufficient reason in his knowledge of the patient's character, for avoiding all mention of anything which would direct his attention to himself. "Health reports" are frequently the basis upon which neuroses are developed, since they call the patient's attention to findings which neither report nor patient can properly evaluate, while the one person best qualified to do so receives no report at all.

If periodic health examinations are to result in benefit to individuals, they must be made by one who individualizes, not by an organization that tends to mechanize the process. If highly technical examinations are necessary, any physician can refer his patient to a clinic for their performance, and he, not the patient, should receive the report from the examiner, so that the latter may profit not only from the technical findings but also from his doctor's knowledge of him as an individual.

If health clinics and commercial institutes are to justify their existence by serving the best interests of their members they must realize that this can be done only by coöperating with the family physician, not by endeavoring to supplant him. They must demand, as hospitals find it necessary to demand, that patients be referred to them for examination by their own physicians and they should report, not to the patient, but to his doctor. They must also realize that the possession of much apparatus does not confer authority upon their findings, and that in the last analysis the patient's life and health are in the care of his own physician, who is "peculiarly fitted" to carry out health examinations "by training and by the relationship which he bears to his patients."

If the family physician is not thus qualified, the remedy lies not in superseding him, but in altering our system of medical education so that it shall give him these qualifications. So long, however, as the responsibility for patients' lives and happiness lies in his hands, he must have confidence and coöperation from them if he is to serve them efficiently. Destruction of that confidence and coöperation is too high a price to pay for health examinations.

REFERENCE

1 Garland, Joseph: A Handbook for Health Examinations by Physicians. Boston Med. and Surg. Jour., Vol. 193, No 21, pp. 947-67, Nov. 19, 1925.

MEDICAL HEREDITY

Doctors, no less than other men, are prone to marry and rear families. Like other parents, they are keenly interested in the welfare of their children, and view with interest and some anxiety the development of their offspring. Very few medical men amass fortunes, so it is self evident that their sons and daughters, particularly the sons, must learn to earn their own living. How well do the children of doctors succeed in life? Do they tend to select any particular occupation? Of what value, in short, is a medical ancestry?

These questions must interest us all. They have so aroused the curiosity of William Browning, Professor of Neurology at the Long Island Medical College, that he has undertaken to collect statistics bearing upon these points, and has published them in a volume entitled "Medical Heredity."* His method of study has been to gather from various Who's Who publications, lists of scientific societies and faculties of colleges the names of physician's sons and daughters who have achieved a certain measure of prominence. The period covered extends from the creation of the United States up to 1910, and the study includes 3000 individuals.

The successful sons and daughters are listed according to those vocations in which they achieved the greatest success. Unfortunately Dr. Browning does not include those sons who have made their mark in medicine itself, so we have no way of determining the relative number that follow in their fathers' footsteps. Of the other professions, the law takes 19.4% of doctors' successful sons, which is a slightly greater percentage than the percentage of Yale graduates who are admitted to the bar. (17.9%.) The church takes as many sons from medical parents as medicine takes from fathers among the clergy. A relatively large number become sculptors and artists; many doctors' sons become prominent educators, and many daughters, relatively, achieve prominence as authors. Science in its various branches attracts many, but the world of finance and "big business" shows comparatively few successful sons of doctors. Dr. Browning finds that success along lines which require oratorical ability does not often come to the men in this study; apparently their abilities point more in intellectual and executive directions.

Several interesting situations were unearthed. For example, of Lincoln's cabinet and immediate advisors and assistants an overwhelming majority were sons of medical men. Judge Davis, John Hay, Vice President Hannibal Hamlin, Solomon Foote (floor leader of the Senate), William Seward, Edwin Stanton and Schuyler Colfax were all of medical paternity.

Another subject of interest is the long heritage of medicine belonging to certain families. Among these that of greatest length—eight consecutive generations—is found in the Porter family of Boston.

From the study and his comments thereon it is evident that Dr. Browning considers medical parentage an asset of no mean significance. His statistics do not enable us to compare its value with that of a legal, clerical or pedagogical paternity. It is doubtful whether any amount of statistics would ever give us the whole story, for the influence on the maternal side—no insignificant factor—cannot be estimated by this means. It is encouraging, nevertheless, to read that in the 1910 Who's Who, at least one individual in nineteen is the child of a physician. We are seldom able to leave our children much in material possessions, but we should transmit to them the ability to work hard, to think independently, to judge human nature shrewdly but mercifully. These three factors form a fairly sound foundation upon which to build a successful career.

COD LIVER OIL IN SURGICAL TUBERCULOSIS

Goodrich B. Rhodes, M.D., of Cincinnati, has recently published in the *Journal of Laboratory and Clinical Medicine*, December, 1925, the results of investigations carried on with the object of developing a medicine which would have a curative action on closed tuberculous abscess. Such a medicine, it was apparent, would be a heavy oil which would be slowly absorbed. Cod liver oil was selected because it was known to have a beneficial effect in general tuberculosis when administered by mouth, and because of the work of Campbell and Kuper who found that it had an inhibitory effect on virulent strains of the tubercle bacillus.

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* "Medical Heredity." Distinguished Children of Physicians (United States to 1910). By William Browning, Ph.B., M.D Published by the Norman Remington Co., Baltimore.

Cod liver oil, although too acid to be tolerated by the tissue when injected unmodified, may be neutralized by boiling with an equal quantity of magnesium hydroxide, and, on centrifugalization, is recovered unchanged in appearance. In this form its use in an abscess cavity is nonirritating and safe.

The apparent photo-chemical activity of the oil is considered as responsible for the results obtained. Some of the work of Kugelmans and McQuarrie was duplicated by exposing X-ray films to the oil and demonstrating a photo activity, although the nature of this phenomenon is not yet clearly understood. This activity is somewhat diminished after alkalinization. The author feels sufficiently satisfied with the preliminary work to extend the use of the treatment to empyema.

A SANATORIUM FOR NON-PULMONARY TUBERCULOSIS

In the past the situation of those less well-to do people afflicted with non-pulmonary tuberculosis has been deplorable. They could not be cared for at the great general hospitals except for brief periods while undergoing an attempt to remove the focus by surgical means. During convalescence from such operations, or during treatment by immobilization, essential factors to cure are fresh air, sunshine and a cheerful environment. These were difficult to secure, and in many cases healing was delayed by want of them.

It is with great satisfaction, therefore, that those cognizant of the situation will read the announcement in the letter from the State Commissioner of Health on page 36 that the State Sanatorium at Lakeville has been set aside for the reception of such cases, and that Dr. Z. B. Adams has been appointed consultant for orthopedic cases.

The situation of this institution, in the southeastern part of Massachusetts, where the sandy soil, abundance of sunshine, less inclement weather, and miles of scrub oak and pine combine to give a climate well suited for open air treatment, is admirable for the purpose to which the hospital has been dedicated.

THIS WEEK'S ISSUE

Contains articles by the following named authors:

Lahey, Frank H., M.D. Harvard 1904; F.A.C.S.; Surgeon to New England Deaconess Hospital and to New England Baptist Hospital. Dr. Lahey writes on "Rope Grafts," page 1.

Hinton, William A., S.B. Harvard 1905; M.D. Harvard 1912; Assistant Director Division of Biologic Laboratories, Massachusetts Department of Public Health; Pathologist, Boston Dispensary. Dr. Hinton's subject is: "The Kahn and Wassermann Reactions. A Comparative Study," page 5.

Berman, Saul, A.B. Harvard 1916; M.D. Harvard 1920; Recently Resident Obstetrician at Boston Lying-in Hospital and Fellow in Obstetrics, Harvard Medical School. Now Assistant Obstetrician to Out-patients, Boston Lying-in Hospital. "The Treatment of Eclampsia," page 7.

Starr, M. Allen, M.D., LL.D.; Sc.D.; Emeritus Professor of Neurology, Columbia University, writes a "Memorial of Prof. Jean-Marie Charcot," page 10.

The Massachusetts Medical Society

SECTION OF OBSTETRICS AND GYNECOLOGY

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Boston Lying-In Hospital, Boston, Mass.

(Communications and questions addressed to the Clerk will be gladly received and cheerfully answered.)

A recent communication to the Section has asked for an opinion regarding the use of pituitrin in labor.

First of all let us define the term "pituitrin." Pituitrin is a name in general use applied to the aqueous extract of the posterior lobe of the pituitary body or infundibulum. This extract is marketed by various chemical and pharmaceutical houses under divers names, such as pituitrin, infundin, hypophysin, pituglandol, pituitary extract, etc. The extracts put out by the different companies vary enormously in strength, and standardization does not yet exist. Furthermore the same company may market different grades of pituitrin, the usual method being to advocate the weaker preparation for obstetrical use, the stronger for surgical.

The action of pituitary extract is of immense interest and practical value to the physician doing obstetrics, inasmuch as this substance is the surest and most rapidly working oxytocic. First advocated for clinical use some sixteen years ago in the treatment of postpartum hemorrhage and placenta previa, and to be used following abdominal Cesarian section, the drug was rapidly and enthusiastically accepted, and its use was speedily extended with reckless disregard of indications or results. Pituitrin was to abolish the bugbear of difficult labor and to render operative obstetrics obsolete.

Since the early wave of enthusiasm which greeted its use the drug has passed through a period of depression consequent upon the disasters which were soon reported in rapidly mounting numbers. Rupture of the uterus, premature detachment of the placenta, severe lacerations of the cervix and perineum, and death of the fetus before or shortly after birth, were shown to result from pituitrin given to unsuitable cases or in overlarge doses. Today, however, although the drug is still unstandardized it is of enormous value to the obstetrician provided he understands clearly the limitations of its use, and the dangers attendant upon its indiscriminate employment. It is not necessary that all the leaders of obstetric thought be unanimous in their attitude toward pituitrin to enable a fairly definite rationale of its usefulness to be defined.

Indications for the use of pituitrin in labor, like those for abdominal Cesarian section, may be classed as absolute and relative.

The only absolute indication for pituitrin is to secure prompt contraction of the completely empty uterus postpartum. The chief circumstance under which this indication holds is in postpartum hemorrhage due to atony of the uterus.

All other indications for the use of pituitrin in labor are relative. These include:

1. Routine administration after delivery of the placenta. If this is done the administration of ergot in addition should never be omitted, as the ergot will effect permanent contraction and retraction of the uterus in continuance of the prompter but more transitory action of the pituitrin. This is a safe indication.

2. Routine administration at the beginning of the third stage, before the placenta is delivered. This procedure in many cases minimizes the blood loss during and after the third stage, and promotes rapid separation and extrusion of the placenta. It does not, however, relieve the physician of the duty of keeping close watch of the condition of the uterus during and after the third stage, and should be followed by the administration of ergot after (never before!) delivery of the placenta. Occasionally it may cause hour-glass contraction of the uterus with resulting necessity for manual removal of the placenta.

3. Administration during the second stage. The indication for the use of pituitrin before the baby is delivered is rare, and is never called for in normal labor. However, in the case of secondary inertia, with labor at a standstill, the cervix fully dilated, the head on the perineum, and the uterine contractions weak and ineffectual, the administration of a small dose of pituitrin,—3 minims or less, will often obviate the necessity for forceps delivery. This is a reasonable, though not a frequent nor absolute indication.

4. Administration during the first stage. Most disasters occur from the use of pituitrin during the first stage, and the use of the drug during this period is frequently unwarranted. The real indications for the use of this powerful preparation in the first stage are so rare and so closely bound up with the contraindications that an extended discussion must be taken up in the next issue of the obstetric column.

MISCELLANY

A TRIBUTE TO DR. BOTTOMLEY

BY RT. REV. MGR. M. J. SPLAINE

At the funeral services for Dr. John T. Bottomley, on December 21, a beautiful tribute was paid to his memory by Mgr. Splaine, who took for his topic: "Blessed are the dead that die in the Lord, for their works follow them," and spoke as follows:

"Your Eminence and dear friends:

"A few short days ago the angel of death came among us and took to his eternal home the soul of our beloved friend, Dr. Bottomley. Widespread grief was immediately manifested and every one who knew him felt that he had lost a benefactor and a friend.

"This morning tender and loving hands have brought his mortal remains before the altar of God to receive the final blessing of his church at the hands of his Cardinal Archbishop. Before that final ceremony is performed it is fitting and profitable to pause a while to discover the reason why Dr. Bottomley's life was so beneficial to his fellow men and why his death has sounded such a note of universal grief.

"Ordinarily Mother Church mourns in silence the passing of her children, but when one has been conspicuous in his service to his church and to his fellow men, she gives voice to her loss in order that other sons may be inspired to imitate his good deeds and to give the best that is in their power to the service of God and humanity.

"Dr. Bottomley dedicated his life to that noble profession of medicine and surgery. In a few short years it was remarkable how he had established a unique reputation of excellence in the practice of his profession. This was due, in the first place, to his own inimitable and charming personality. Blessed by God with a buoyant and happy disposition, he radiated sunshine and good cheer.

"He possessed the heart of a wholesome boy and his face beamed and reflected, as in a mirror, the kind and generous and sympathetic impulses that stirred within his heart.

"To this natural disposition, that made it a joy for his patients to see him enter a sickroom, he added a skill and technique that were the result of hard, conscientious work and study. He was a tireless worker because he realized the great responsibility his profession imposed upon him. He had a high regard for the sacredness of his calling, the handling of human life, coöperating with the designs and works of God, and he constantly studied to bring to his work an enlightened understanding and a loyal devotion.

"Would that there were time this morning to pay tribute to that Christlike profession of healing and curing poor suffering humanity. Only the golden book of the recording angel of God can reveal its complete and glorious story.

"The countless personal sacrifices, the long and lonely vigils, the constant exposure to peril, tender nursing and solicitous care, the restoration of loved and needed ones to health, the relief from agonizing pain, the joy to anxiously waiting households, the health of the community and the safety of the people; all these are made possible because of that eminent profession that partakes of the spirit of our Blessed Savior Himself, Who went about doing good.

"This is the honored profession to which Dr. Bottomley brought added honor by his life and practice, and he rose to be one of its great leaders. His ability was universally recognized, as may be seen in the long list of national and international surgical associations to which he belonged, in many of which he held high and important offices.

"He was one of the founders and for some time president of our Catholic Society of Physicians, the Guild of St. Luke, founded by His Eminence, the Cardinal, for the benefit of the doctors of his diocese. He was for many years the head of Carney Hospital, and to read the list of hospitals of which he was a director or consultant is like calling a great roll of honor in medicine. It was in these hospitals that he trained a rising generation of doctors and nurses and freely shared with them the results of his wide experience. A university lecturer, writer and teacher, added to his own personal practice made up the story of his tireless and busy life.

"His service to his country was no less conspicuous. In two wars he cast his lot with the defenders of his country in caring for the sick and wounded soldiers.

"But it was in the generous donation of his services to the poor that the name of Dr. Bottomley will be most gratefully remembered. Who can measure the extent of this form of his charity? Again only the recording angel of God can tell it all; but for this we know that there is laid up for him in Heaven the reward of the faithful servant, 'In-as-much as you did it to the least of these my little ones, you did it unto Me.'

"As was to be expected from such a noble and generous soul, his home life was beautiful and exemplary. Here also he found his inspiration, and the generous relinquishment of his companionship at every call so that he might bring the blessings of comfort and relief to those in pain and suffering has won for his beloved wife and children the sincerest sympathy of all his friends in this sad hour of their loss and bereavement.

"But the great source of his noble life was his Catholic faith. Like the great Pasteur, his faith in God was simple and sublime. The deeper he delved into the mysteries of science, the more he beheld the wonderful works of God. His faith was the inspiration of his work and his work deepened and strengthened his faith in God. He realized that in his profession he was dealing with that which belongs to God and the sanctity of life was reverenced and secure within his hands.

"He approached his work with the delicacy of a soul and mind attuned to the truths of God and it was this reverence for his Creator that won for him universal confidence and esteem. It stamped his life with the ineffaceable seal of true success, a noble profession, pursued with the highest integrity and honor, for the glory of God and the welfare of his fellow man.

"Surely, as we gather here this morning about his mortal remains, we owe a solemn duty to this valiant soldier of Christ. It is the gratitude of our prayers. He toiled without ceasing and he labored without rest, and now it is our duty to pray to God to grant him rest at last, to grant him blessed eternal rest and that glorious reward of a faithful servant whose work was well done.

"Dear, good Dr. Bottomley, beloved by all your friends, rest in peace. For now

" 'Thy day has come, not gone,
Thy sun has risen, not set.
Thy life is now beyond
The reach of death or change.
Not ended but begun,
In God.

O noble soul! O gentle heart!
Hail and farewell.' "

PRINCIPAL CAUSES OF DEATH: 1924

Washington, D. C., December 28, 1925.—The Department of Commerce announces that 1,173,990 deaths occurred in 1924 within the death registration area of continental United States, representing a death rate of 11.9 per 1,000 population as compared with 12.3 in 1923, 11.8 in 1922 and 11.6 in 1921.

The death registration area (exclusive of the Territory of Hawaii) in 1924 comprised 39 states, the District of Columbia, and 18 cities in nonregistration states, with a total estimated population on July 1 of 99,030,494, or 88.4 per cent of the estimated population of the United States.

The decrease in the rates from influenza from 44.7 per 100,000 population in 1923 to 19.6 in 1924, and from pneumonia, all forms, from 109 to 98.4, accounts for nearly three-fourths of the decrease in the rate from all causes. Some of the other causes for which the rates decreased are measles, diphtheria, diarrhea and enteritis (under two years), and tuberculosis (all forms).

Slight increases appear in the death rates from diseases of the heart, cancer, and automobile accidents.

TRUSTEES OF ROBERT BRIGHAM HOSPITAL WIN SUIT

Judge Carroll of the Supreme Court has sustained the demurrers to the bill in equity filed by William E. L. Dillaway, a trustee under the will of Elizabeth F. Brigham, in which he sought to enjoin Dr. Joel E. Goldthwait from administering the affairs of the Robert B. Brigham Hospital for Incurables, and to enjoin the practice of admitting and treating patients who are not domiciled in Boston or citizens of Boston and those who are not suffering from incurable diseases or those who are financially able to pay for hospital treatment.

The act of the judge affirms the belief of the respondents that Mr. Dillaway had no standing to bring the bill; that his petition to the court was multifarious as it was founded on allegations not so related that they could be dealt with in the same bill and that he had not availed himself of the rights he had open to him.

The court also denied Mr. Dillaway the right to intervene in a proceeding brought by the Robert B. Brigham Hospital for incurables for instructions as to the terms of Mr. Brigham's will, especially relating to the charges made by Mr. Dillaway.

Mr. Dillaway brought his petition after Mayor Curley had asked the Legislature to take a hand in the matter. The mayor set up in substance the allegations of Mr. Dillaway in his bill, which was subsequent to the mayor's charge.

It was claimed both by the mayor and Mr. Dillaway that there is mismanagement of the hospital as it is being administered by Dr. Goldthwait and that the management is in violation of the terms of Mr. Brigham's will.

The mayor's complaint went to Attorney General Benton and, after an examination of the facts, Mr. Benton found the mayor's charges to be unjustified.

NEW BUILDING FOR BOSTON CITY HOSPITAL

The new Gynecological and Obstetrical Building at the Boston City Hospital, the cornerstone of which was laid recently, will add much needed facilities for the patients, physicians and nurses. The building, which will occupy the northeast corner of the hospital grounds at East Concord and Albany streets, will cost $610,000. It will be built with a concrete frame and will have cast stone up to the second floor level and above that water-struck brick. The architecture is an adaptation of the Georgian type and the building will have a frontage of 73 feet on East Concord street and 148 feet on Albany street. The entrance will face the grounds. Fifty-four feet of the Albany street side will be set back 28 feet from the enclosure wall, in order to give open space for shrubs and grass and to give suitable surroundings for the steel balconies for patients along this side. Each balcony floor is to be laid with plate glass.

There will be seven floors. The basement will have locker rooms and will temporarily serve as the general stores for the hospital. On the first floor will be a large room for visitors, clinical examination room, dressing room and five wards given over to gynecological cases. A physicians' waiting room, laboratory, examination room and dressing room, as well as five more gynecological wards, will occupy the second floor. The third, fourth and fifth floors will be given over to maternity wards and there will be nurseries with glass partitions separating the cribs. The sixth floor will have the operating and related rooms. Each ward floor will have a kitchen, service rooms and two sound-proof isolation rooms. Ritchie, Parsons & Taylor are the architects.

DR. ABEL AWARDED PRIZE OF RESEARCH CORPORATION

For having done more to promote human enjoyment of life than any other living American scientist, Dr. John J. Abel, professor of pharmacology at Johns Hopkins University, has received the first annual prize of the Research Corporation of America.

Arthur A. Hammerschlag, President of the corporation, said the prize would be awarded annually to scientists who make their contribution to knowledge freely and without the hope of reaping a monetary reward from their endeavors as an encouragement to "pure scientific research." The award is $2,500 a year.

This condition is imposed, the announcement said, because of the unusual foundation upon which the prize is based, the Research Corporation itself having sprung from the work of a man who gave over the commercial benefits resulting from his discoveries for the promotion of science.

In 1911, Dr. Frederick G. Cottrell, then working as a chemist in the United States Bureau of Mines, patented processes of electrical precipitation, which are now used widely in many manufacturing processes. He wanted science to get the benefit of the patents and offered them to the Smithsonian Institution as custodian. Upon their basis the Research Corporation was formed as a stock company for their commercial exploitation, but with the provision in its charter that there should be no dividends paid upon stock, and that the net profits should be used "to supply means for the advancement and extension of technical and scientific investigation."

Scientific bodies in all branches of work were asked to coöperate in naming candidates for the award; hence it is felt among scientists that the honor accorded Dr. Abel is comparable in distinction to the Nobel prize. The choice of the judges was unanimous.

"Dr. Abel's contributions have been chiefly in that difficult branch of chemistry that has to do with reactions within living bodies," Mr. Hammerschlag said, "Of special interest glands his discoveries with regard to the ductless glands and the light he has shed on their functions. His contributions are largely of that basic nature which extends human knowledge of the intensely important subjects involved and leads to the better control of disease and to the maintenance of health.

RECENT DEATH

JARVIS—Dr. William Furness Jarvis, of Waltham and Boston, died at the Boston City Hospital following an operation for appendicitis, on Christmas Day, 1925, at the age of 68.

Dr. Jarvis was born and brought up in Boston, his birthday being August 19, 1857. Graduating from Boston Latin School, he entered the Medical School of Harvard University and took his M.D. with the class of 1880. Then he was house officer at the Deer Island and Rainsford Island hospitals. He settled in practice in Waltham and joined the Massachusetts Medical Society in 1884. Although living of late years in Boston he maintained a legal residence in Waltham. He retired from practice about seven years ago to be associated with the Odd Fellows insurance organization, of which he was president and treasurer.

Under the former city government, Dr. Jarvis was acitve in Waltham politics and served as a member of the School Board nine years. He was also an Alderman for several years and president of the board. He served as instructor in the Waltham Training School for Nurses and was a trustee and a member of the staff of the Waltham Hospital. He was a former commander of Gethsemane Commandery, Knights Templar, Newton; a former master of Isaac Parker Lodge of Masons, Waltham, and a member of the Governor Gore Lodge of Odd Fellows, Waltham.

He is survived by a widow, Maria B., and two daughters, Mrs. William F. Farley of Waltham and Mrs. Edmond W. Wilson of Boston, wife of the assistant superintendent of the Boston City Hospital.

CORRESPONDENCE

STATE SANATORIUM FOR NON-PULMONARY TUBERCULOSIS

December 24, 1925.

Editor, Boston Medical and Surgical Journal:

Beginning January 1, 1926, Dr. Z. B. Adams will be Orthopedic Consultant at the State Tuberculosis Sanatorium at Lakeville. According to a policy initiated some time ago, this institution is being given over to non-pulmonary cases of tuberculosis. As a large fraction of these will be orthopedic cases adequate consultation is indispensable to a high quality of service. The Commonwealth as well as the Department is to be congratulated on Dr. Adams' acceptance of this position. Also appreciation should be expressed for those who in past years had sufficient vision to lay the foundation for furnishing service to this type of patient. Massachusetts is the first State to offer it and the late Dr. Eugene R. Kelley was among those active in this accomplishment.

Yours truly,
George H. Bigelow, M.D.,
Commissioner of Public Health.

ANOTHER OPINION ON THE USE OF TOBACCO

Mr. Editor:

Anent your editorial entitled "Deadly Nicotine" appearing in the Journal for December 10, permit me to call your attention to an article of mine, entitled "Tobacco Smoking and Mental Efficiency," published in the *New York Medical Journal* for March 14, 1914. In my article are related the results of about 2000 psychological tests made on medical students, of all ranges of scholarship attainment, both before and immediately after smoking. These tests showed conclusively that the smoking of tobacco lowers one's mental efficiency from 10 to 23 per cent.; and that the greatest impairments of mental efficiency were in "the psychological fields of imagery, perception and association, on which fundamentals of mentality are based all constructive thought and reasoning." These were not tests of weak students as against bright students, but tests made upon each indifferently. These findings have never been gainsaid by those competent to analyze, and have been generally accepted by psychologists.

You quote from a brochure by one Dr. Limerick that the popular opinion relative to the harmful effect of tobacco on man "cannot survive any of the tests having scientific respectability." Evidently Dr. Limerick speaks from a wealth of ignorance. If before penning his article he had taken the trouble to look up available literature on the subject he might have been spared the ignominy of making himself ridiculous. But who is this Dr. who speaks so generously of matters scientific? He is not listed in the biographies of "American Men of Science," and he is not listed in the A. M. A. Medical Directory of 1918; so he must be a medical graduate of *less* than seven years' standing, and he must be an individual that was unrecognized as late as 1920 at least. Yet he flaunts the imposing title of "Director of the Department of Pharmacology of the Brooklyn Diagnostic Laboratory," whatever this may be. Rather strange that a chap but seven years out of the medical school, and without established reputation, should be a Director of a Department in any reputable "Diagnostic Laboratory." Did you investigate at all before affording him the comfort of editorial mention?

In the interests of scientific truth I think you are in duty bound to undo the mischief you have wrought, so far as lies in your power.

Yours observantly,
A. D. Bush.

The editorial in question was exactly what it purported to be: a comment on two articles dealing with the same subject from opposite standpoints. No claim is made that it was a scientific analysis of a mooted question. The Journal believes that every man has a right to express his views, and reserves to itself the liberty of commenting on them. The Journal is always ready to try and undo any mischief it may have unconsciously wrought; in the present instance it sees no occasion for any such attempt.—Editor.

CANCER AMONG FRENCH CANADIANS

Mr. Editor:

The cancer death rate of French Canadians is so much below the normal that it deserves much more attention than it has heretofore received. Through the courtesy of the Provincial Board of Health of Quebec I have been furnished with the cancer death rates for the province covering the period 1894-1923, indicating an increase in the cancer rate from a minimum of 29.0 per 100,000 in 1894 to a maximum of 56.5 in 1923. During the same period the mortality from heart diseases has increased from 67.4 to 73.7, while the mortality from diabetes has increased from 3.2 to 8.3 in 1922—diminishing, however, to 7.7 in 1923. The rate, however, has been as high as 8.8 in 1920. The mortality from all causes in the Province of Quebec has diminished from 19.79 per 1000 in 1896 to 13.63 in 1923. The details of the mortality from cancer since 1894 are given in the table below.

Cancer Death Rate of the Province of Quebec
1893-1923
(Rate per 100,000)

	Rate		Rate		Rate
1894	29.0	1904	32.2	1914	46.7
1895	30.0	1905	37.5	1915	49.9
1896	30.1	1906	38.2	1916	46.0
1897	36.2	1907	40.7	1917	50.2
1898	34.2	1908	38.8	1918	49.6
1899	34.7	1909	42.2	1919	52.0
1900	36.2	1910	40.9	1920	55.1
1901	33.7	1911	47.8	1921	55.7
1902	37.7	1912	46.4	1922	56.4
1903	34.7	1913	46.8	1923	56.5

The cancer death rate of Ontario since 1914 has increased from 69.6 per 100,000 in 1914 to 90.0 in 1923. As yet no satisfactory explanation has been forthcoming that would explain the really extraordinary contrast between the Ontario cancer death rate of 90.0 for 1923 and the Quebec cancer death rate for the same year of 56.5. I may say in this connection that the cancer death rate of Quebec in 1914 was 46.7.

Frederick L. Hoffman.

CONNECTICUT DEPARTMENT OF HEALTH

Morbidity Report for the Week Ending
December 19, 1925

Diphtheria	49	German measles	2
Last week	58	Influenza	4
Scarlet fever	57	Mumps	15
Last week	63	Pneumonia (lobar)	47
Typhoid fever	3	Septic sore throat	3
Last week	14	Tetanus	1
Measles	186	Tuberculosis, pulmonary	26
Last week	142	Tuberculosis, other forms	2
Whooping cough	48	Gonorrhea	21
Last week	29	Syphilis	9
Bronchopneumonia	36		
Chickenpox	111		
Encephalitis epid.	2		

MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH

Diseases Reported for the Week Ending
December 26, 1925

Chickenpox	138	Scarlet fever	101
Diphtheria	46	Syphilis	24
Epidemic cerebrospinal meningitis	2	Suppurative conjunctivitis	3
German measles	14	Tuberculosis, pulmonary	42
Gonorrhea	71	Tuberculosis, other forms	5
Influenza	12	Tuberculosis, hilum	2
Measles	654	Typhoid fever	5
Mumps	22	Whooping cough	154
Ophthalmia neonatorum	5		
Pneumonia, lobar	58		

NEWS ITEMS

CANCER CONTROL IN EUROPE—George A. Soper, managing director of the American Society for the Control of Cancer, has returned to New York after a three months' investigation of the problem of cancer control in Europe. He reports that great interest and activity are being shown in research work into the fundamental causes of cancer and in providing patients with the best means of treatment which the existing state of knowledge permits. Surgery, radium and X-rays still afford the main reliance which science and experience have thus far developed for the cure of this disease.

DR. WOOD TO INVESTIGATE DR. BELL'S CURE FOR CANCER—In order that the American medical profession may be fully informed regarding the lead treatment for cancer recently announced by Dr. W. Blair Bell, Dr. Francis Carter Wood, director of the Crocker Institute of Cancer Research, Columbia University, has sailed to London to make a first-hand investigation.

DR. ISAAC A. ABT has been appointed attending physician in diseases of children at St. Luke's Hospital. He will be on active service after January 1, 1926.

On October 2, 1925, **PROFESSOR HENRY A. CHRISTIAN** delivered an address at the laying of the cornerstone of the Albert Merritt Billings Hospital of the University of Chicago. He said in part:

"The University of Chicago, as I understand from various of its officials and professors, intends to try

a great and on the whole a new experiment in medical education, in which this hospital will be an integral part, probably the most important part.

"The purpose of this school will be to train, as the main product, medical investigators and medical teachers rather than practitioners. Medicine is to be a graduate department of the university rather than a professional school; organization and development will be determined to that end. The number of students is to be small and particularly selected as potentially capable of development into investigators and teachers. The methods are to be those of the graduate schools of our universities. At once numerous difficulties will confront the organizers of such a school."

These difficulties, Professor Christian believes, include the method of selecting students, the size of classes and the teaching methods. Of the greatest importance is the academic freedom of the institution. Professor Christian, referring to this factor in success, says:

"So far academic freedom in experiments in medical education has been hampered by two things: lack of means to carrry out necessary steps in the experiment, and lack of freedom to expend existing funds because of limitations set by donors. I know of no undertaking in medical education today not hampered by the one or the other of these factors."

A DINNER IN HONOR OF DR. DEAN LEWIS, **recently appointed professor of surgery at the Johns Hopkins University and surgeon-in-chief to the Johns Hopkins Hospital, Baltimore, has been arranged for January 22, 1926. The surgical alumni of Johns Hopkins and leading surgeons from other parts of the country have been invited. There will be a series of clinics, and in the course of these meetings a movement will be started to create an organization to be known as the Johns Hopkins Surgical Society.—*Science.***

THE MEDICAL RESEARCH COUNCIL OF ENGLAND **is having a new laboratory built at Millhill, Middlesex, for the use of Dr. W. E. Gye and J. E. Barnard in their studies of cancer. It is expected that the building will be finished by next March, at which time the two investigators, who at present often are working five miles apart, will be able to continue their experiments together under greatly improved conditions and with a larger staff of assistants.—*Science.***

HARVEY HADDEN OF LONDON has contributed £1000 to the endowment fund of the James Mackenzie Institute for Clinical Research, St. Andrews. The County of Perth has contributed £7500 as a tribute to the late Sir James Mackenzie, the founder of the institute, who was born in that county.—*Science.*

THE GENERAL EDUCATION BOARD OF NEW YORK has given the sum of $700,000 to the University of Virginia School of Medicine, which is half the amount needed for the erection and equipment of the new buildings planned. The gift is conditional upon the appropriation of $250,000 by the State and the raising of $450,000 by the university.—*Science.*

REPORTS AND NOTICES OF MEETINGS

BOSTON CITY HOSPITAL

THE Staff Clinical Meeting of the Boston City Hospital, will be held in the Cheever Surgical Amphitheatre, Thursday, Jan. 21, 1926, at 4 P. M. Demonstration of cases by members of the Medical and Surgical Staff. Discussion of the cases invited. Physicians, Medical Students and Nurses invited.

JOHN J. DOWLING, *Superintendent.*

AN ANNOUNCEMENT

THE New England Health Institute for the year 1926 will be held in Concord during May.

HARVARD MEDICAL SOCIETY

THE next regular meeting of the Harvard Medical Society will be held as usual in the amphitheatre of the Peter Bent Brigham Hospital Jan. 12, 1926, at 8:15 p. m. The program follows:—

1. Demonstration of cases.
2. Some Recent Observations on Sympathetico-adrenal Mechanisms—Dr. W. B. Cannon.

All members of the Medical Profession, Medical Students and Nurses are invited.

S. A. LEVINE, *Secretary.*

WINTER TRAINING SCHEDULE FOR RESERVE MEDICAL DEPARTMENT OFFICERS

December 31, 1925.

THE next meeting in the Winter Training schedule for Reserve Medical Department Officers will be held at the Medical Library, 8 Fenway, Boston, Mass., on Jan. 16, 1926, at 8:00 P. M.

You are urged to attend and bring a Reserve officer or some Doctor who might become one with you.

HENRY S. BECKFORD,
Major, M.C. (DOL).
Headquarters First Corps Area,
Office of the Corps Area Surgeon,
Boston, Mass.

ESSEX NORTH DISTRICT MEDICAL SOCIETY

THE 84th Semi Annual meeting of this society was held in Centre Church vestries, Main Street corner of Vestry Street, opposite City Hall, Haverhill, Mass. (Tel. 548) Wednesday, January 6, 1926.

Following the dinner was the business meeting, after which these papers were presented.

1. James S. Stone, M.D., of Boston, President of the Massachusetts Medical Society.
2. Edwin H. Place, M.D., of Boston, Clinical Professor of Pediatrics at Harvard Medical School, upon "Modern Treatment of Scarlet Fever."
3. Robert L. DeNormandie, M.D., of Boston, Instructor in Obstetrics at Harvard Medical School, upon "The Four Common Causes of Maternal Mortality."

J. FORREST BURNHAM, M.D., *Secretary*
RANDOLPH C. HURD, M.D., *President.*

BOSTON MEDICAL HISTORY CLUB MEETING OF DECEMBER 21, 1925

The first paper was by Dr. Stephen d'Irsay, a Research Fellow in the Department of Physiology, Yale University, and a graduate of the University of Budapest. He spoke on "Patristic Medicine." His main thesis was to demonstrate that there was a second important channel through which the learning of the ancient world was transmitted to the western world in the Middle Ages besides the channel of Arabic sources. The well-known channel was from classical antiquity, through the Arabs, through the translators and the School of Salerno to the time of the Renaissance. The other channel rested on the Fathers of the Church. It may be stated thus: classical antiquity, Lactantius, St. Augustine, St. Isidore of Seville, Rabanus Maurus, Hugo of St Victor, Paris. Dr. d'Irsay covered the scientific and medical activities of the Church Fathers up to the time of the eighth century of St. Isidore and hinted at the developments after 750 A. D. The paper was discussed by Drs. Streeter, Henderson and Sarton.

Dr. Robert B. Osgood read a paper on "Masters of Bone and Joint Surgery." He followed the course of the development of orthopedic surgery from the time of Hippocrates to the present date. He laid special stresss on the work of Paré, who made useful to the surgeon the anatomical work of Vesalius, on Nicholas Andry, who wrote the first book on orthopedics in two volumes and was the first to use the term (1743), on the work of John Hunter and Potts in London, and especially the pioneer work on bone and joint surgery of Delpech (1828). He then followed the course of our knowledge of this subject through the work of Dupuytren, Marshall Hall, Duchenne, Ollier, Macewen, Hilton, H. O. Thomas, and his brilliant nephew, Sir Robert Jones, and the work of Physick, J. C. Warren, and H. J. Bigelow in this country. He brought in many interesting details of the development of this special department of surgery.

BALTIMORE CITY MEDICAL SOCIETY AND MARYLAND CANCER COMMITTEE

At a meeting of the Baltimore City Medical Society and Maryland Cancer Committee held on December 18, the relation of laboratory research to the cancer problem was brought up by Dr. Woglum.

Four distinct helps brought to the surgeon by the laboratory were cited. "First, microscopic examination of a tumor during an operation by a trained pathologist in attendance on the surgeon furnishes the operator with accurate information on the nature of the tumor so that he knows how to proceed with the operation.

"Second, laboratory experiments upon animals have shown that it is safe in cases of human patients to remove small pieces of a suspected cancer for examination and diagnosis. Dr. F. C. Wood proved that such removals did not spread the infection.

"Third, work by Broders and MacCarty at the Mayo clinic appears to prove that microscopic examination of tumors during operations can actually show how malignant, that is, how dangerous cancer is.

"It is too early for definite assertion, but repetition of this work by Wood and Knox and Greenough and others suggests that it may be possible to offer a modest forecast of the degree of malignancy after careful examination of the tumor," said Dr. Woglum on this point.

Finally, he said, the surgeon has been supported in his suspicion that prolonged palpitation of a tumor in an effort to reach a diagnosis was a dangerous procedure, that continued feeling in examination of a suspected tumor had been shown to spread the infection.

X-RAY EXPERIMENTS

On assistance in treatment by radiologists, he said, the laboratory had been able to determine experimentally the difference between the doses of radium or X-ray necessary to kill cancer cells, and the doses that would kill normal cells as well. A certain amount of work in the actual standardization of doses had thus come out of the laboratory, to the aid of the men trying to cure patients. He said work was being done to determine whether the action of the radium in curing cancer was a direct or an indirect action.

Once this question has been settled radiotherapy will be applied with more confidence than is possible today," declared the speaker.

What Dr. Woglum described as "a pretty experiment" was carried out in the Crocker Institute laboratories, at which he works, by a woman, Dr. Prigosen, proving that X-ray does not act, as some have claimed, to prevent the spread of cancer by stopping the lymphatic channels. India ink, injected into the footpads of a rat, was seen to travel with equal ease up the lymphatic channels on both the X-ray-treated side and the untreated side of the animal.

Dr. Woglum showed slides illustrating a piece of research being done in the Columbia laboratories to determine the nature of the regressive action that takes place in certain rat tumors, the Jensen sarcoma, that disappear spontaneously. It is possible that in this work there may be an important clue for future developments, he said.

"The tumor digs its own grave by immunizing its host, who then responds by killing the tumor cells at the margin of the growth first and finally throughout the entire neoplasm," the doctor said.

"There is some agent, or some condition in this rat which appears to reside in the connective tissues, not in the blood stream, and which has the power to kill the cancer cell and leave the other cells of the body intact. It is, in the case of this neoplasm, the ideal cure for which we are searching; at the present stage the phenomenon has no further applications, however.

"Such are the experiments which the laboratory has done or is still doing, and which can give results of immediate value," concluded Dr. Woglum.

Emphasizing the difficulties and slowness of the research, he added:

"Let me assure you that there is not a single aspect of the cancer problem that is not under investigation somewhere in the world."—*New York Times.*

SOCIETY MEETINGS

District Medical Societies

Essex South District Medical Society

Wednesday, January 6—Beverly Hospital. Clinic, 5 P. M. Dinner, 7 P. M. Speaker, Dr. Paul D. White, Boston, "Recent Progress in the Study and Treatment of Heart Disease."

Wednesday, February 3—At 7 P. M. Hawthorne Hotel, Salem. Dr. Walter Timme, New York. Subject to be announced.

Wednesday, March 3—Lynn Hospital. Clinic, 5 P. M. Dinner, 7 P. M. Dr. Charles E. Mongan, Somerville, "Some Problems of Present-Day Practice."

Thursday, May 6—Censors meet at Salem Hospital, 3:30 P. M.

Tuesday, May 11—The Tavern, Gloucester. Annual meeting. Speaker to be announced.

Essex North District Medical Society

January 6, 1926—The semi-annual meeting at Haverhill.

May 5, 1926—The annual meeting at Lawrence.

Middlesex East District Society

January 13—At the Harvard Club at 6:30 P. M. Address by Dr. Richard Ohler, "Metabolism."

February 10—At the Harvard Club. Address by Dr. William F. Boos: subject, "Industrial Poisoning."

April 14—At the Harvard Club at 6:30 P. M. Address by Dr. William E. Ladd, subject to be announced later.

May—Annual meeting, Colonial Inn, North Reading. Subject and speaker to be announced.

Suffolk District Medical Society

January 6—At 8:15 P. M. Medical Section (meeting postponed from December). Dr. W. J. MacDonald will speak on "Experimental Work in High Blood Pressure."

January 27—At 8:15 P. M. Combined meeting with Boston Medical Library. "Medical Experience of an Explorer," Dr. J. Hamilton Rice.

February 24—At 8:15 P. M. Surgical Section. "Post-operative Care of Surgical Cases," Dr. Dean Lewis, Chicago. "Surgical Convalescence," by Dr. John Bryant.

March 31—At 8:15 P. M. Medical Section. "Some Experiments in Group Physical Examination," Dr. Roger I. Lee.

April 28—At 8:15 P. M. Annual meeting. Election of officers. "Some Diagnostic, Prognostic and Therapeutic Aspects of Disorders of the Blood," Drs. George R. Minot, Cyrus C. Sturgis and Raphael Isaacs.

Notices of meetings must reach the JOURNAL office on the Friday preceding the date of issue in which they are to appear.

BOOK REVIEWS

BOOKS RECEIVED FOR REVIEW

Bailey's Text-book of Histology. By Oliver S. Strong and Adolph Elwyn. Seventh edition. New York: William Wood & Co. 939 pages. Price, $7.

Pitfalls of Surgery. By Harold Burrows. Second edition. New York: William Wood & Co. 525 pages. Price, $4.50.

Psychological Healing—A Historical and Clinical Study. By Pierre Janet. New York: The Macmillan Co. In two volumes, totaling 1265 pages. Price per set, $14.

Eyesight Conservation Bulletin 7—Eyesight Conservation Survey. Published by the Eyesight Conservation Council of America, New York City. 219 pages. Price, $1.

Biological Monographs and Manuals: No. IV—Reproduction in the Rabbit. By John Hammond. Edinburgh and London: Oliver & Boyd. 210 pages. Price, 15/- net.

Diseases of Infants and Children. By Henry Dwight Chapin and Lawrence Thomas Royster. New York: William Wood & Co. Fifth revised edition. 633 pages. Price, $6.

Chemical Pathology. By H. Gideon Wells. Philadelphia and London: W. B. Saunders Co. Fifth edition revised. 790 pages. Price, $8.50.

Massage and Therapeutic Exercise. By Mary McMillan. Philadelphia and London: W. B. Saunders Co. 331 pages. Price, $2.50.

A Text-book of Medical Diagnosis. By James M. Anders and L. Napoleon Boston. Third edition, entirely reset. Philadelphia and London: W. B. Saunders Co. 1422 pages. Price, $12.

Thoracic Surgery—The Surgical Treatment of Thoracic Disease. By Howard Lilienthal. Philadelphia and London: W. B. Saunders Co. Two volumes, totaling 1294 pages. Price, $20.

Applied Biochemistry. By Withrow Morse. Philadelphia and London: W. B. Saunders Co. 958 pages. Price, $7.

The Therapy of Puerperal Fever. By Privatdozent Dr. Robert Koehler. American edition prepared by Hugo Ehrenfest. St. Louis: C. V. Mosby Co. 276 pages. Price, $4.

A Text-book of Physiology. By William D. Zoethout. Second edition. St. Louis: C. V. Mosby Co. 616 pages. Price, $4.50.

Studies from the Rockefeller Institute for Medical Research. Reprints Vol. LIV. New York: Privately printed. 625 pages. Price, $1.

Aids to Surgical Diagnosis. By Cecil P. G. Wakeley. New York: William Wood & Co. 170 pages. Price, $1.50.

Some Encouragements in Cancer Surgery. By C. Grey Turner. New York: William Wood & Co. 75 pages. Price, $3.50.

The Medical Department of the United States Army in the World War. Vol. XV. Statistics: Part 2—Medical and Casualty Statistics. Washington: Government Printing Office. 1368 pages.

Health Through Prevention and Control of Diseases. By Thomas D. Wood and Hugh Grant Rowell Yonkers-on-Hudson, New York: World Book Co. 122 pages.

Collected Addresses and Laboratory Studies. Vol. I. London School of Hygiene and Tropical Medicine. 183 pages.

Intravenous Therapy—Its Application in the Modern Practice of Medicine. By Walton Forest Dutton. Philadelphia: F. A. Davis Co. 594 pages. Price, $6.

Abdominal and Pelvic Surgery for Practitioners. By Rutherford Morison. New York: Oxford University Press. 212 pages. Price, $2.75.

Post-Mortem Appearances. By Joan M. Ross. New York: Oxford University Press. 216 pages. Price, $2.75.

Mikroanalyse nach der Mikro-Dennstedt-Methode. von Casimir Funk. München: Verlag von J. F. Bergmann. 15 pages. Price, M. 1.50.

Die Otitischen Erkrankungen des Hirns, der Hirnhäute under der Blutleiter. von O. Körner und K. Grünberg. München: Verlag von J. F. Bergmann. 213 pages. Price, M. 18.

Acute Infectious Diseases—A Handbook for Practitioners and Students. By J. D. Rolleston. New York: Physicians and Surgeons Book Co. 376 pages.

Lehrbuch der Entwicklungsgeschichte des Mensclen. von Dr. H. K. Corning. München: Verlag von J. F. Bergmann. 696 pages. Geb. M. 36.–

The Surgical Clinics of North America—October, 1925. Vol. 5, No. 5, St. Louis Number. Philadelphia and London: W. B. Saunders Co. Prices, $12 and $16 per clinic year.

A Text-book of Psychology for Nurses. By Maude B. Muse. Philadelphia and London: W. B. Saunders Co. 351 pages. Price, $2.50.

Ultra-Violet Radiation and Actinotherapy. By Eleanor H. Russell and W. Kerr Russell. New York: William Wood & Co. 262 pages. Price, $3.50.

Medical Heredity—Distinguished Children of Physicians. (United States, to 1910.) By William Browning. Baltimore, Md.: Norman, Remington Co. 250 pages. Price, $4.

Tumors of the Colon and Rectum. By Jerome M. Lynch and Joseph Felsen. New York: Paul B. Hoeber, Inc. 259 pages. Price, $12.

Bailey's Text-Book of Histology. Revised and rewritten by OLIVER S. STRONG, A.M., Ph.D., and ADOLF ELWYN, A.M. Seventh Edition. pp. 939. William Wood and Company, New York.

This book somewhat belies its name, being better suited for reference than for a text-book, owing to its large size and fairly detailed consideration of many tissues. Over a third of the volume is devoted to the nervous system. This portion includes the better-known work of the Spanish school and is one of the best descriptions of the central nervous system the reviewer has read. A great number of illustrations and diagrams greatly aid the text in presenting a lucid description of the tissues.

A number of useful references are given to the literature dealing with the various organs. A feature of value to students is a list of the technical procedures advised for demonstrating the various tissue elements, referring to a brief compend of histological technique given in the last part of the book. The methods of neurological technique given are very valuable, though hardly suited for the use of students.

The inclusion of a larger amount of embryology would have been a great addition to the value of the material presented, giving a much clearer comprehension of the structure and relationship of the organs and tissues.

Chemical Pathology. By H. GIDEON WELLS, Ph.D., M.D. Fifth edition. W. B. Saunders Company. pp. 790.

There are few books, if any, covering the related aspects of two sciences as satisfactorily as Dr. Wells' text has done for pathology and biochemistry. Helpful to the student of pathology in understanding the chemical changes underlying visible alterations in the tissues, the book is indispensable for research workers. It also escapes to a very large degree the dogmatic attitude text-books are expected to have. Without sacrificing clarity, a brief resume is given of the opposing views on disputed points, and the important evidence presented. An abundance of references facilitates the further investigation of any points in which the reader may be particularly interested.

This new edition has been very completely revised, and well reflects the recent advances in our knowledge in the fields of biological chemistry and pathology. The chapters dealing with autolysis and retrogressive changes are very stimulating reading for those who wish to understand the mechanism by which the tissue changes found in the clinic or autopsy rooms have come to pass. The material on immunity is very valuable.

Only by reading the volume can the reader appreciate how well the author has fulfilled the requirements for a book of this type, as set forth in the preface to the first edition: "It should furnish collateral reading to the student . . . . ; it should exploit to the graduate in medicine the advances that are being made along lines of fundamental importnce to clinical medicine; it should serve for the investigator as a source of information . . . . ; and it should serve as a guide to the sources of our knowledge of these subjects."

Parasitology for Medical Students. By ALEX. MILLS KENNEDY. Oxford Medical Publications. 142 pages. Price $3.

This small book is unpretentious, clearly and intelligently written and well illustrated. It deals with a comparatively small number of parasites but treats of them thoroughly. It is therefore an eminently practical book. The descriptions are ample for identification and there are paragraphs on Prophylaxis and Treatment. There are six chapters: Insects and Arachnoids; Tape Worms or Cestodes; Flukes or Trematodes; Round Worms or Nematodes; Protozoa; Spirochaetes and Fungi.

Only the more important and common human parasites are considered. It is in no sense a book of reference for the laboratory man, but it is precisely the kind of book that the practitioner and resident pathologist have needed. The author gives every evidence of being thoroughly familiar with the subjects he has written about and the book is a pleasing contrast to the ordinary effort in this line.

Les Rayons Ultra-violets et Associes en Therapeutique. By JEAN SAIDMAN. Pp. 580, with 194 illustrations. Paris: Gaston Doin et Cie, 1925.

The latest and, as far as we know, the best exposition of ultra-violet energy, its nature and production by means of lamps and their uses in therapeutics, has been made by Jean Saidman.

This author has succeeded in presenting in a scientific and orderly manner the known facts regarding the subject. It is a service greatly needed in view of the multitude of minor publications scattered through the world and, especially, the confusion in the minds of physicians generally as to the principles involved and the relative merits of the apparatus employed. Manufacturers of ultra-violet apparatus have published and distributed a great deal of *ex parte* evidence, naturally with the object of interesting prospective buyers of their apparatus. Saidman, in France, and Percy Hall* in England, take a much more general view and their works will well repay perusal. Percy Hall's excellent work is the first by an Englishman.

After discussing some of the properties of ultra-violet rays and their natural sources the author takes up the artificial sources of ultra-violet energy and describes and illustrates a large variety of lamps, both of the carbon arc and quartz mercury vapor types. There are now over sixty of these lamps, most of which are described in this treatise. Reflectors, localizers, compressors and filters are also described.

The second part of Saidman's work deals with the physiologic and chemical action of ultra-violet. The third part deals with the method of application of actinotherapy, a study of the accidents or dangers attending its use and the different diseases treated by the ultra-violet rays. A large part of the section is devoted to the treatment of rickets, tuberculosis, wounds and fistulas and diseases of the skin.

Saidman has had a very extensive experience in the hospitals of Paris and he has made a most valuable contribution to an important department of physiotherapy. The long bibliography does not seem to include any American references, excepting the work of Prof. G. C. Abbot, Cooper-Hewitt, Hess, Unger and Steiner, and H. H. Hazen.

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*Hall, Percy, M.R.C.S., F.R.C.P. Lond.: Ultra-Violet Rays in the Treatment and Cure of Disease. 110 pp. William Heinemann, London, 1924.

Tumors of the Spinal Cord. By Charles A. Elsberg, M.D. With three hundred and fifty-four illustrations and four hundred and twenty-one pages. Published in 1925 by Paul B. Hoeber, Inc. New York.

The volume is based on the author's findings in one hundred proved cases of cord compression by tumor together with an exhaustive study of the literature. The symptomatology, pathology and operative technique of this condition are discussed in detail. It is excellently printed and beautifully illustrated. The chapters on the relation of tumors to the cord, symptomatology, differential diagnosis and operative technique are of especial value, the author's analysis of symptoms and description of technique being clear, definite and concise.

Some two hundred pages are devoted to case histories and comment and it will seem to some readers that such an extensive use of case histories detracts from the clarity and vigor of the work. Such criticism is in a measure justified, but the critic must remember that a work of this nature is intended for the analyst as well as the student of neurological surgery and for this purpose case histories are essential. The chapter on cerebrospinal fluid is good as far as it goes but to many neurologists it will seem that the knowledge to be obtained from careful study of the cerebrospinal fluid is not sufficiently utilized in Dr. Elsberg's clinic.

Taken all in all the book is a valuable contribution to our knowledge of this subject and one, the perusal of which will be of benefit to the surgeon, the internist, and the orthopedist as well as to the neurologist and neurological surgeon.

Diseases of the Heart. By Sir James Mackenzie. Fourth Edition, 1925. Oxford University Press.

This classic, edited anew for the fourth time, was published after the death of the author. Sir James Mackenzie wrote the preface to this fourth edition January 24, 1925, and in July, 1925, after his death Lady Mackenzie added a paragraph in which she tells of her indebtedness to Dr. James Orr of St. Andrews, for assistance in the final publication of this well known work.

Like its predecessors this edition contains a wealth of valuable clinical observation somewhat rearranged and expanded. There are more illustrations, especially electrocardiograms of which there were but few in earlier editions. The case records previously collected together at the end of the volume have been scattered among the chapters to which they apply. This is a useful improvement.

The chapters dealing with the clinical significance of the arrhythmias, with angina pectoris, the soldier's heart, murmurs and valvular defects, and the venous pulse should all be read by the practitioner of medicine, be he internist alone or engaged in general practice.

There is much however in the book that could justly in a work of this nature be omitted. The principle that symptoms are probably due to disturbance of reflex arcs is of course a valuable one and worthy of much emphasis, but its exposition and reception by the medical profession is hindered rather than helped by the excess amount of space in chapter after chapter devoted to its discussion. A simple statement or at best a single chapter would have sufficed. At present the reader is apt to be dismayed in his attempts to penetrate this first half of the book in order to reach the valuable clinical observations further on, and too often does the author repeat that medicine has not progressed. Of course his observation that the introduction of instrumental methods into clinical medicine may lead us astray is justified, but he exaggerates far too much the tendency of some of the medical profession to forsake the study of symptoms.